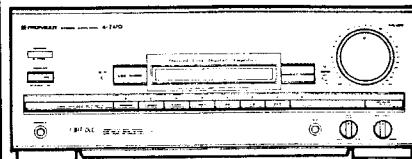


Service Manual



ORDER NO.
ARP2157

STEREO AMPLIFIER

A-Z470

MODEL A-Z470 HAS FOLLOWING VERSIONS :

Type	Power requirement	Export destination
HE	AC220V, 240V(switchable) *	European continent
HB	AC220V, 240V(switchable) *	United Kingdom
HEWZIW	AC220V, 240V(switchable) *	Germany and Italy

* : Change the primary wiring.

- This manual is applicable to the A-Z470/HE, HB and HEWZIW types.
- As to the HB and HEWZIW types, refer to page 46.
- This product is a component of a system. As to the system composition, refer to the system manual.
- This product does not function properly when independent ; to avoid malfunctions, be sure to connect it to the prescribed system component, otherwise damage may result.
- Ce manuel pour le service comprend les explications de réglage en français.
- Este manual de servicio trata del método ajuste escrito en español.

CONTENTS

1. SPECIFICATIONS	2	5. ADJUSTMENTS	45
2. EXPLODED VIEWS, PACKING AND PARTS		5. RÉGLAGE	45
LIST	2	5. AJUSTE	45
3. P.C.B's PARTS LIST	7	6. FOR HB AND HEWZIW TYPES	46
4. SCHEMATIC DIAGRAMS AND P.C.BOARD		7. PANEL FACILITIES	61
CONNECTION DIAGRAMS	13		

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1. SPECIFICATIONS

Amplifier Section

Continuous Power Output (DIN) 70 W + 70 W
 (1 kHz, T.H.D. 1 %, 8 Ω)

Music power (DIN) 110 W + 110 W (1 kHz, T.H.D. 1 %, 8 Ω)

D/A converter section

Signal-to-Noise Ratio More than 96 dB (EIAJ)

Dinamic range More than 94 dB (EIAJ)

Frequency range 25 Hz to 20 kHz

Total Harmonic Distortion (1 kHz, 35 W, 8 Ω). No more than 0.06 %**

Input sensitivity

PHONO (MM) 2.5 mV

MIC 0.25 mV

VCR 150 mV

LD 250 mV

Output level

DAT, VCR 150 mV

MUTING -∞

Power Supply/Miscellaneous

Power requirements a.c. 240 Volts ~, 50/60 Hz

Power consumption 360 W

AC outlets switched (x 1) 50 W

Dimensions 360 (W) x 343 (D) x 135.5 (H) mm

Weight (without package) 8.6 kg

Accessories

Operating instructions 1

Remote control unit 1

Dry cell batteries "AAA" (IEC R03/UM-4) 2

** Measured By Audio Spectrum Analyzer.

2. EXPLODED VIEWS, PACKING AND PARTS LIST

NOTES:

- Parts without part number cannot be supplied.
- Parts marked by "◎" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

2.1 PARTS LIST

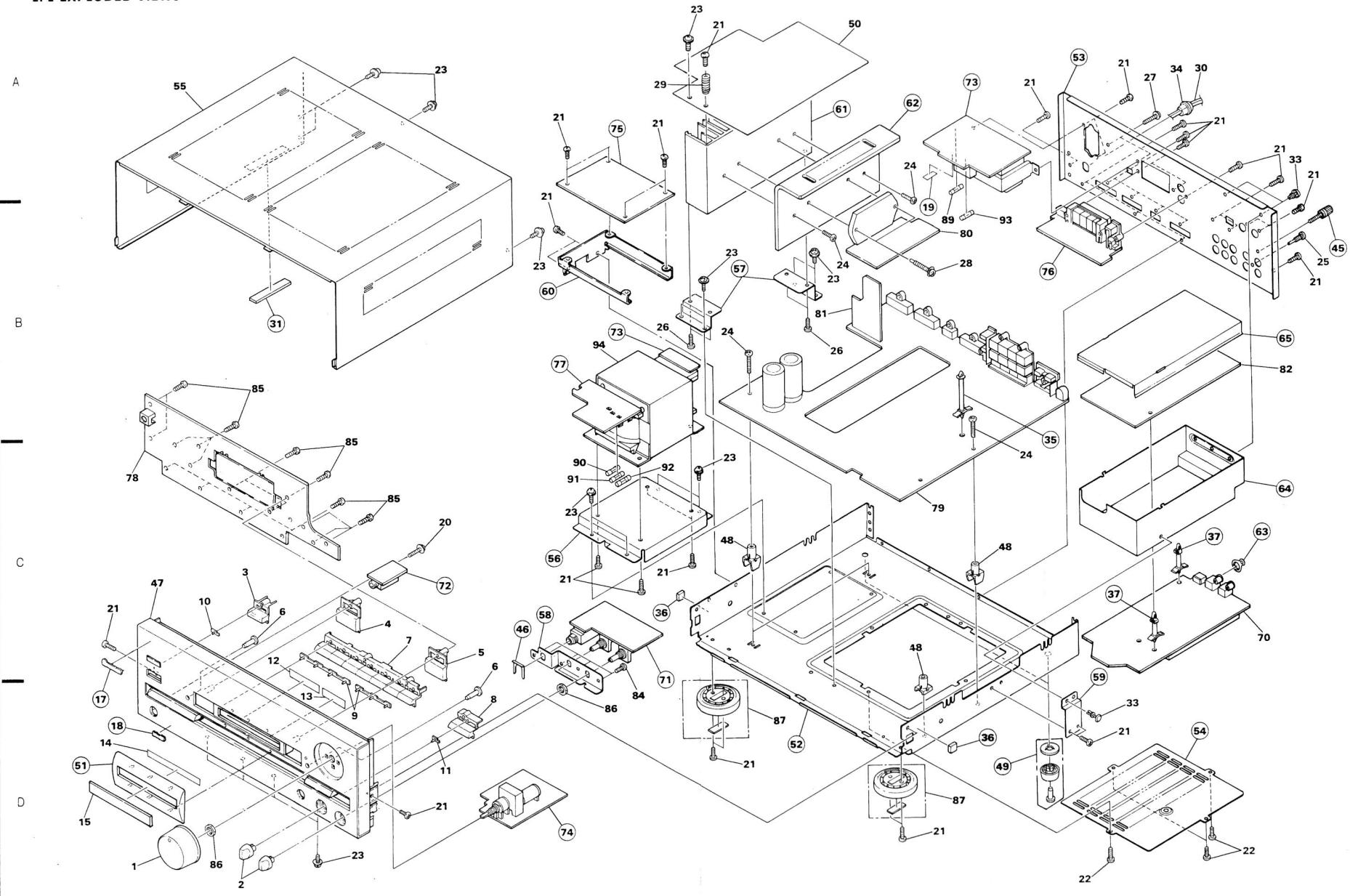
Mark	No.	Description	Part No.	Mark	No.	Description	Part No.	
	1	VOL KNOB(VOLUME)	AAB1117		50	PLATE	AMR2133	
	2	ROTARY KNOB(MIC LEVEL, BALANCE)	AAB1130		51	SASH		
	3	POWER BUTTON	AAD1595		52	CHASSIS		
	4	BOTTUN L(LSS MODE)	AAD1596		53	REAR PANEL		
	5	BUTTON L(DIRECT MODE)	AAD1597		54	BOTTOM PLATE		
	6	KIN BUTTON(MUTING, LSS SET))	AAD1682		55	BONNET CASE	ANE1208	
	7	FUNCTION BUTTON	AAD1968		56	TRANS. HOLDER		
	8	BUTTON S(SPEAKERS)	AAD1970		57	HEAT SINK HOLDER		
	9	LENS L	AAK1757		58	VOLUME HOLDER		
	10	LENS S	AAK1758		59	HOLDER		
	11	LENS	AAK1759		60	HOLDER A		
	12	SHEET			61	HEAT SINK		
	13	SHEET			62	HEAT SINK		
	14	PVC SHEET			63	GROUND PLATE		
	15	PANEL	AAK2116		64	SHIELD CASE		
	16	.....			65	SHIELD COVER	
	17	NAME PLATE(PLASTIC)			66	OPERATING INSTRUCTIONS	ARC1249	
	18	NAME PLATE				(Dutch, Swedish, Spanish, Portuguese)		
	19	FUSE CARD			67	OPERATING INSTRUCTIONS	ARE1181	
	20	SCREW (STEEL)	ABA-283			(English, German, French, Italian)		
	21	SCREW	ABA-298		68	WARRANTY CARD		
	22	SCREW (STEEL)	ABA1009		69	.....	
	23	SCREW (STEEL)	ABA1011		70	DAC ASSEMBLY	AWK1385	
	24	SCREW	ABA1018		71	MIC ASSEMBLY		
	25	SCREW (STEEL)	ABA1047		72	HEAD PHONE ASSEMBLY		
	26	SCREW (STEEL)	ABA1050		73	SUB TRANS ASSEMBLY		
	27	SCREW (STEEL)	ABA1072		74	POWER VR ASSEMBLY		
	28	SCREW	ABA1098		75	RELAY ASSEMBLY		
	29	SPRING	ABH1032		76	SP TERMINAL ASSEMBLY		
△	30	AC POWER CORD	ADG1019		77	FUSE ASSEMBLY		
	31	RUBBER CUSHION			●	78	DISPLAY ASSEMBLY	AWZ3361
	32			●	79	AF ASSEMBLY	AWZ3403
	33	NYLON RIVET	AEC-510		●	80	POWER ASSEMBLY	AWZ2747
	34	STRAIN RELIEF	AEC-882		●	81	STANDBY ASSEMBLY	AWZ3505
	35	PCB SUPPORT			●	82	DSP ASSEMBLY	AWK1445
	36	CUSHION			83	REMOTE CONTROLLER (CU-AZ020)	AXD1194	
	37	PCB SPACER			84	SCREW	BBZ26P060FMC	
	38	.....			85	SCREW	BBZ26P080FMC
	39	BATTERY (R03, AAA)			86	NUTS	NK90FZB	
	40	FRONT PAD	AHA1272					
	41	REAR PAD	AHA1273		87	FOOT(PLASTIC)	RXA1276	
	42	PACKING CASE	AHD2008		88	.....	
	43	LITERATURE BAG			△	89 FU1 FUSE(T2.5A)	AEK-403	
	44	PACKING SHEET	AHG1016		△	90 FU2 FUSE(T2A)	AEK-017	
	45	TERMINAL SCREW			△	91 FU3 FUSE(T1.6A)	AEK-405	
	46	MOUNTING PLATE			△	92 FU4 FUSE(T1.6A)	AEK-405	
	47	FRONT PANEL ASSY	AMB1761		93	FU5 FUSE(T2.5A)	AEK-403	
	48	PCB MOULD			△	94 T1 POWER TRANSFORMER	ATS1335	
	49	LEG ASSY(S)			95	BATTERY COVER	AZN2072	

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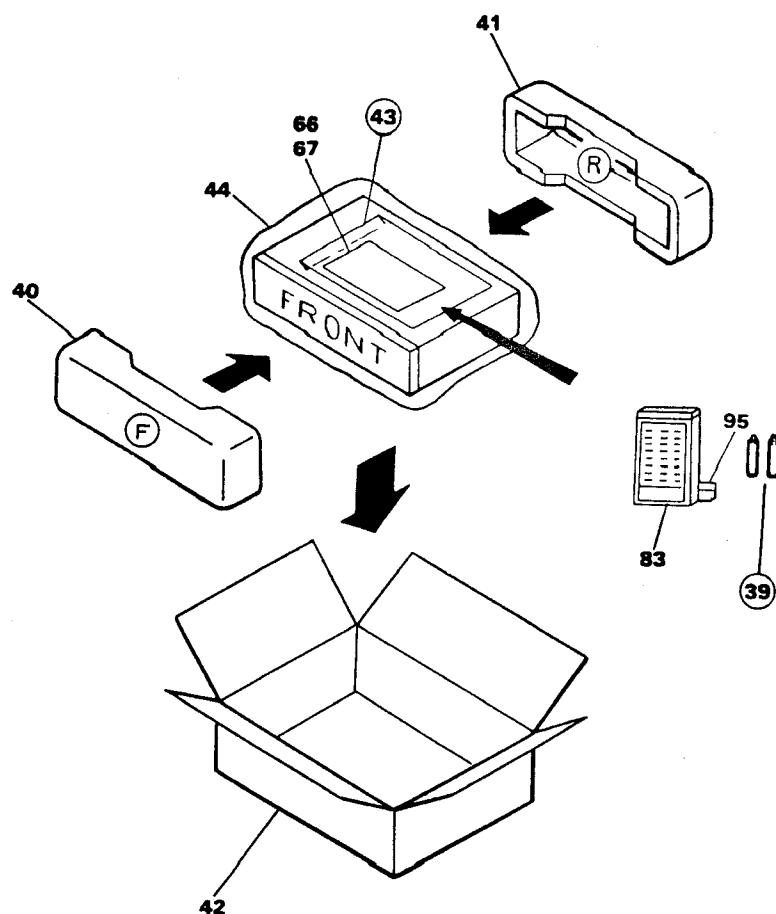
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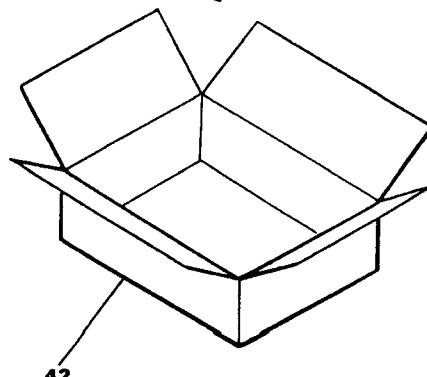
2. 2 EXPLODED VIEWS



2.3 PACKING



A



B

C

D

3. P.C.B's PARTS LIST

NOTES :

- Parts without part number cannot be supplied.
- Parts marked by “●” are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω	56 × 10 ¹	561	.....	RD1/4PS [5] [6] [1] J
47kΩ	47 × 10 ³	473	.....	RD1/4PS [4] [7] [3] J
0.5Ω	0R5	.....	.....	RD2H [0] [R] [5] K
1Ω	010	.....	.....	RD1P [0] [1] [0] K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ	562 × 10 ³	5621	RD1/4SR [5] [6] [2] [1] F
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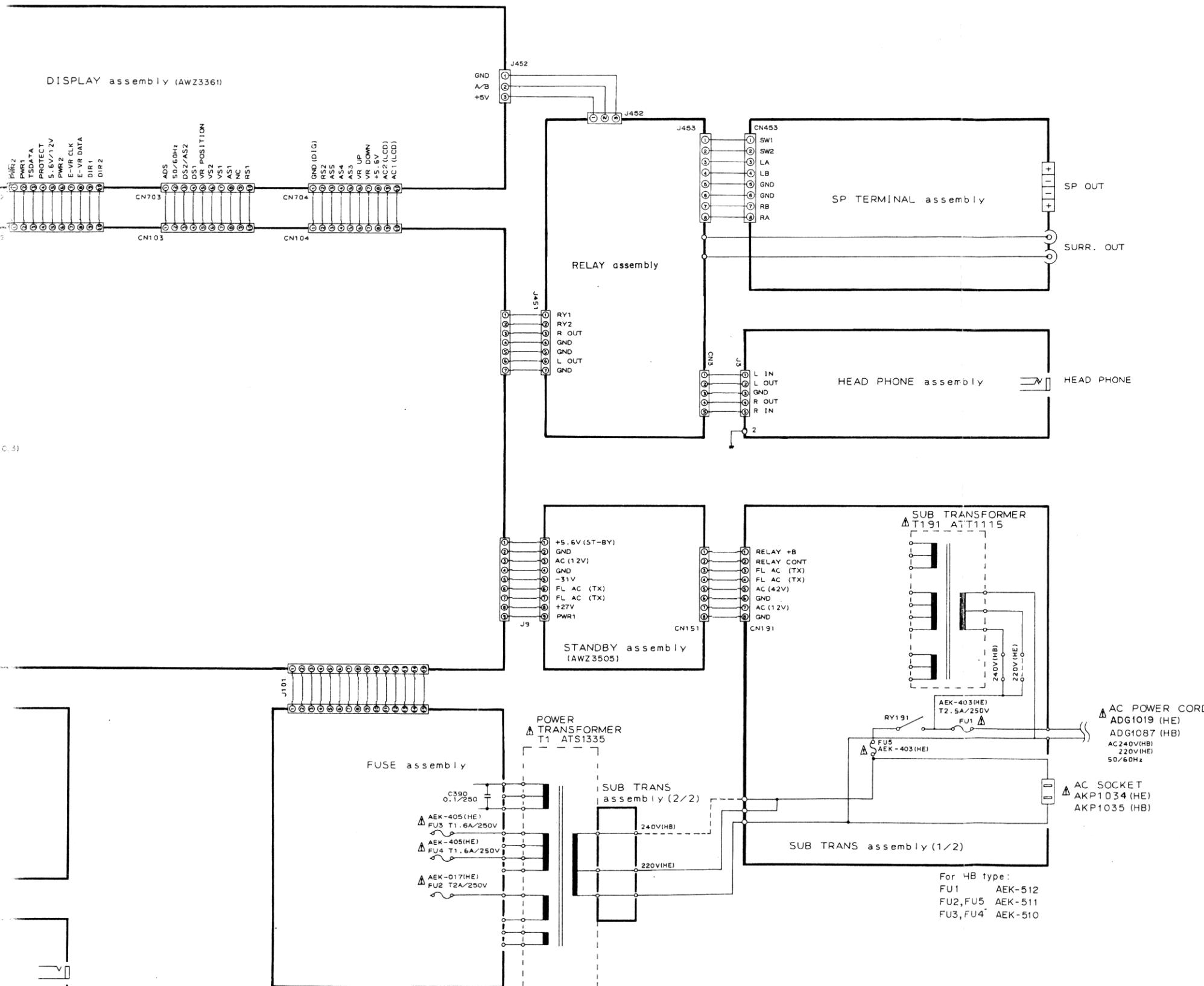
Mark	Symbol & Description	Part No.	Mark	Symbol & Description	Part No.
DAC ASSEMBLY (AWK1385)					
SEMICONDUCTORS			C810	ELECTR.CAPACITOR	CEAS010M50
IC801	LOGIC IC	TC74HCU04AP	C811	AUDIO FILM CAPACITOR	CFTXA224J50
IC802	DIGITAL I.F. IC	PD0037	C812	ELECTR.CAPACITOR	CEAS470M10
IC803	IC DIGITAL FILTER	PD0060	C813	CERAMIC CAPACITOR	ACG1021
IC804	LOGIC IC	TC74HC32AP	C814	CERAMIC CAPACITOR	CCDCH220J50
IC805	D/A CONVERTER	SAA7350GP	C815	ELECTR.CAPACITOR	CEAS101M10
IC806,IC807	IC	NJM072D-E	C816	CERAMIC CAPACITOR	ACG1022
IC808	OP AMP IC	RC4558DXP	C818	ELECTR.CAPACITOR	CEAS101M10
Q801,Q802	TRANSISTOR	RN2203	C819	MICA CAPACITOR	CMA220J500
Q804,Q805	TRANSISTOR	2SC2458	C820	ELECTR.CAPACITOR	CEAS470M10
Q806,Q807	TRANSISTOR	2SC2878	C821,C822	CERAMIC CAPACITOR	CKDYX473M16
Q808,Q809	TRANSISTOR	RN1203	C823	CERAMIC CAPACITOR	ACG1021
Q810	TRANSISTOR	RN2203	C824	ELECTR.CAPACITOR	CEAS010M50
Q811	TRANSISTOR	RN2201	C825	ELECTR.CAPACITOR	CEAS101M10
Q812	TRANSISTOR	RN2203	C826	CERAMIC CAPACITOR	ACG1021
D801-D810	DIODE	HSS104-02	C827	CERAMIC CAPACITOR	CKDYX473M16
D811	ZENER DIODE	RD6.2ESB	C828	ELECTR.CAPACITOR	CEAS470M10
COIL					
L801	AXIAL INDUCTOR	LAU330K	C833,C834	CERAMIC CAPACITOR	CCDSL390J50
L803	BEAD FILTER	ATX1008	C835	CERAMIC CAPACITOR	ACG1019
L804	FERRITE BEAD	ATX1008	C836	CERAMIC CAPACITOR	CKDYB471K50
L807,L808	AXIAL INDUCTOR	LAU010M	C837,C838	CERAMIC CAPACITOR	CCDSL390J50
L809	FERRITE BEAD	ATX1008	C839,C840	CERAMIC CAPACITOR	CKDYX473M16
L810-L813	AXIAL INDUCTOR	LAU010M	C841,C842	ELECTROLYTIC CAPACIT	CEAS470M10
L814	FERRITE BEAD	ATX1008	C843	CERAMIC CAPACITOR	CKDYX473M16
L817	AXIAL INDUCTOR	LAU010M	C844,C845	CERAMIC CAPACITOR	CKDYB222K50
L818	FERRITE BEAD	ATX1008	C847	ELECTR.CAPACITOR	CEAS101M10
L819,L820	AXIAL INDUCTOR	LAU010M	C848	CERAMIC CAPACITOR	CKDYX473M16
L821,L822	AXIAL INDUCTOR	LAU220K	C849-C852	ELECTROLYTIC CAPACIT	CEAS470M10
L823-L826	AXIAL INDUCTOR	LAU010M	C853,C854	CERAMIC CAPACITOR	CKDYX473M16
L827	FERRITE BEAD	ATX1008	C855-C858	CERAMIC CAPACITOR	ACG1017
CAPACITORS					
C805	CERAMIC CAPACITOR	CKDYX473M16	C859,C860	MYLOR FILM CAPACITOR	CQMA102J50
C806	CERAMIC CAPACITOR	ACG1021	C861,C862	PL.STYRENE CAPACITOR	CQSA101J50
C807	ELECTR.CAPACITOR	CEAS010M50	C863,C864	ELECTROLYTIC CAPACIT	CEYAY2R2M50
C808	CERAMIC CAPACITOR	ACG1021	C865,C866	MYLOR FILM CAPACITOR	CQMA683J50
C809	ELECTR.CAPACITOR	CEAS101M10	C867,C868	CERAMIC CAPACITOR	ACG1018
			C869,C870	ELECTROLYTIC CAPACIT	CEYAY2R2M50
			C871-C876	ELECTR.CAPACITOR	CEAS470M10

Mark	Symbol & Description	Part No.	Mark	Symbol & Description	Part No.
RESISTORS				POWER VR ASSEMBLY	
R870-R873	CARBON FILM RESISTOR	RD1/4PM390J		SEMICONDUCTORS	
Other resistors		RD1/8PM□□□J	IC651	OP-AMP IC	RC4558DXP
OTHERS				CAPACITORS	
DIGITAL JACK 1-P		AKB1073	C651,C652	ELECTR.CAPACITOR	CEAS100M25
PHOTO SENSOR MODULE		AKX1015	C653	ELECTR.CAPACITOR	CEAS470M10
CN1 CONNECTOR(11P)		KPE11	C654	ELECTROLYTIC CAPACIT	CEYA470M25
CN5 CONNECTOR(8P)		KPE8	C655	CERAMIC CAPACITOR	CKCYX103M25
T801 OSC TRANSFORMER		ATX1003	C656	ELECTROLYTIC CAPACIT	CEYA470M25
			C657,C658	CERAMIC CAPACITOR	CCCSL390J50
			C661,C662	ELECTR.CAPACITOR	CEAS100M50
MIC ASSEMBLY					
SEMICONDUCTORS				RESISTORS	
IC601	OP-AMP IC	RC4558DXP	R659-R661	CARBON FILM RESISTOR	RD1/4PM390J
Q601,Q602	TRANSISTOR	2SC2458	VR651	VARIABLE RESISTOR	ACX1027
D601,D602	DIODE	HSS104-02	Other resistors		RD1/8PM□□□J
CAPACITORS				OTHERS	
C601	ELECTROLYTIC CAPACIT	CEJA220M16	CN2	CONNECTOR(15P)	KPE15
C602	CERAMIC CAPACITOR	ACG1019			
C603	ELECTROLYTIC CAPACIT	CEJA3R3M50			
C604	CERAMIC CAPACITOR	ACG1017			
C605	AUDIO FILM CAPACITOR	CFTXA474J50			
C606	CERAMIC CAPACITOR	CKCYB681K50			
C607	ELECTROLYTIC CAPACIT	CEJA100M25			
C608	ELECTR.CAPACITOR	CEJA010M50			
C609,C610	ELECTR.CAPACITOR	CEAS470M10			
C611	CERAMIC CAPACITOR	OKCYF103Z50			
C612,C613	ELECTROLYTIC CAPACIT	CEJA100M25			
RESISTORS					
R614,R615	CARBON FILM RESISTOR	RD1/4PM390J			
VR601	VARIABLE(100K-X1)	ACS1026			
VR602	VARIABLE(10K-X1)	ACS1025			
Other resistors		RD1/8PM□□□J			
OTHERS					
JACK		AKN1017			
HEAD PHONE ASSEMBLY					
CAPACITORS					
C451	CERAMIC CAPACITOR	CKDYX104M25			
RESISTORS					
△ R453-R456	METAL OXIDE RESISTOR	RS2LMF331J			
OTHERS					
JACK		AKN1010			
SUB TRANS ASSEMBLY					
SEMICONDUCTORS					
△ D191,D192	ZENER DIODE	RD6.2ESB3			
CAPACITORS					
△ C191,C192	CKA (0.01/AC400V)	ACG1003			
OTHERS					
△ AC SOCKET 1-P		AKP1034			
SOCKET 8-P		AKP1045			
△ RY191	RELAY	ASR1024			
T191	POWER TRANSFORMER	ATT1115			

Mark	Symbol & Description	Part No.	Mark	Symbol & Description	Part No.
C707	CEA (47000/5.5V)	ACH1070	C409,410	CERAMIC CAPACITOR	CKDYB102K50
C708	ELECTR.CAPACITOR	CEAS4R7M50	C411,C412	ELECTR.CAPACITOR	CEAS010M50
C709,C710	CERAMIC CAPACITOR	ACG1021	C413,C414	ELECTR.CAPACITOR	CEAS220M50
C711	CERAMIC CAPACITOR	CKCYX473M25	C415,C416	ELECTR.CAPACITOR	CEAS470M50
RESISTORS			C417,C418	ELECTR.CAPACITOR	CEAS101M25
R742	RESISTOR ARRAY 100K	RA5T104J	C423	ELECTR.CAPACITOR	CEAS470M50
R744	RESISTOR ARRAY(100K)	RA6T104J	C425,C426	CERAMIC CAPACITOR	CCDSL030C50
R761	RESISTOR ARRAY (10K)	RA4T104J	C427-C430	ELECTROLYTIC CAPACIT	CEYA220M50
Other resistors		RD1/8PM□□□J			
OTHERS			RESISTORS		
X701	CERAMIC RESONATOR	ASS1025	R405,R406	CARBON FILM RESISTOR	RDR1/4PM563
SOCKET(10P)		AKP1044	R411-R414	CARBON FILM RESISTOR	RD1/2PM472J
REMOTE RECEIVER UNIT		AXX1010	△ R417,R418	CARBON FILM RESISTOR	RD1/4PMFL22
			△ R419	CARBON FILM RESISTOR	RD1/2PM102J
			△ R420	CARBON FILM RESISTOR	RD1/4PMFL10
			△ R421	CARBON FILM RESISTOR	RD1/4PMFL47
			△ R422	CARBON FILM RESISTOR	RD1/4PMFL10
Other resistors				Other resistors	RD1/8PM□□□J
RELAY ASSEMBLY					
SEMICONDUCTORS			FUSE ASSEMBLY		
Q451	TRANSISTOR	DTC124ES	CAPACITORS		
Q452,Q453	TRANSISTOR	2SD438	C390	MYLOR FILM CAPACITOR	CQMA104K250
Q454	TRANSISTOR	DTC124ES			
Q455,Q456	TRANSISTOR	2SD438			
D451-D460	ZENER DIODE	RD12ESB3			
COILS			●AF ASSEMBLY (AWZ3403)		
L451,L452	COIL	ATH1004	SEMICONDUCTORS		
CAPACITORS			IC101	REGULATOR IC	UPC78M05H
C461-C464	MYLOR FILM CAPACITOR	CQMA104J50	IC102	REGULATOR IC	NJM78M56FA
RESISTORS			IC103	REGULATOR IC	NJM79M05FA
R461-R464	CARBON FILM RESISTOR	RD1/4PMFL100J	IC104	REGULATOR IC	UPC78M12H
R474-476	METAL OXIDE RESISTOR	RS2LMF102J	IC105	MECHANISM DRIVER IC	TA7291S
Other resistors		RD1/8PM□□□J			
OTHERS			IC201	OP-AMP IC	RC4558DXP
CN451	CONNECTOR(7P)	KPC7	IC202	LOGIC IC	TC4066BP
RY451-RY455	RELAY	ASR-112	IC203	LOGIC IC	MC14052BCP
			IC204	OP-AMP IC	M5218ALF
			IC205	E-SW IC	LC4966
SP TERMINAL ASSEMBLY					
SWITCHES			IC206	LOGIC IC	MC14052BCP
S451	SWITCH	ASH1015	IC207	OP-AMP IC	RC4558DXP
CAPACITORS			IC208	OP-AMP IC	M5218ALF
C465	ELECTROLYTIC CAPACIT	CEANP4R7M100	Q101	TRANSISTOR	2SB560
			Q102	TRANSISTOR	2SA970
OTHERS			Q103-Q105	TRANSISTOR	2SC2458
PIN JACK(2P)		AKB1039	Q106	TRANSISTOR	2SD438
SPEAKER TERMINAL 8-P		AKE-111	Q107,Q108	TRANSISTOR	DTC124ES
CN453	JUMPER CONNECTOR	KPC8	Q551	TRANSISTOR	2SA1048
			Q552	TRANSISTOR	2SC2603
●POWER ASSEMBLY (AWZ2747)					
SEMICONDUCTORS			Q553	TRANSISTOR	2SA1048
IC401	AUDIO IC	STK4211-5P	D101	DIODE	RBV602
CAPACITORS			D102-D107	DIODE	S5566
C401,402	CERAMIC CAPACITOR	CKDYF472Z50	D108	DIODE	RB152
C403	ELECTR.CAPACITOR	CEAS4R7M50	D109	DIODE	HSS104-02
C404	ELECTROLYTIC CAPACIT	CEHAQ4R7M50			
C405,C406	CERAMIC CAPACITOR	CCDSL470J50	D110	ZENER DIODE	RD33ESB2
C407,C408	ELECTROLYTIC CAPACIT	CEYA101M50	D111	ZENER DIODE	RD6.2ESB
			D112,D113	DIODE	HSS104-02
			D114	ZENER DIODE	RD3.0ESB1
			D115	DIODE	HSS104-02

Mark	Symbol & Description	Part No.	Mark	Symbol & Description	Part No.
D116	ZENER DIODE	RD4.7ESB			
D117	DIODE	HSS104-02			
D158	ZENER DIODE	RD12ESB3			
CAPACITORS			OTHERS		
C101	CKA (0.01/AC250V)	ACG1005-A	PHONO JACK 4-P	AKB-115	
C102,C103	CERAMIC CAPACITOR	CKDYF103Z50	PIN JACK(6P)	AKB1123	
C104,C105	ELECTROLYTIC CAPACIT	ACH1031	PLUG(10P)	AKM1037	
C106,C107	ELECTR.CAPACITOR	CEAS222M16	JACK	AKN-203	
C108	ELECTR.CAPACITOR	CEAS471M50	SOCKET(4P)	AKP1046	
C109	ELECTR.CAPACITOR	CEAS332M25	SOCKET(14P)	AKP1048	
C110	ELECTR.CAPACITOR	CEHAQ101M50	SOCKET(15P)	AKP1049	
C111,C112	ELECTR.CAPACITOR	CEAS101M50	SOCKET(13P)	AKP1052	
C113	ELECTROLYTIC CAPACIT	CEHAQ220M50	SCREW	PBZ30P080FMC	
C114	ELECTROLYTIC CAPACIT	CEHAQ470M50			
C115	ELECTR.CAPACITOR	CEHAQ101M50			
C116	ELECTROLYTIC CAPACIT	CEHAQ221M10			
C117	ELECTR.CAPACITOR	CEAS100M25			
C118	CERAMIC CAPACITOR	CKCYX103M25			
C119	ELECTR.CAPACITOR	CEAS221M10			
C120	ELECTR.CAPACITOR	CEAS010M50			
C121	CERAMIC CAPACITOR	ACG1021-A			
C160	ELECTR.CAPACITOR	CEAS101M50			
C201,C202	CERAMIC CAPACITOR	ACG1017-A			
C203,C204	ELECTR.CAPACITOR	CEAS2R2M50			
C205,C206	ELECTR.CAPACITOR	CEAS3R3M50			
C206	ELECTR.CAPACITOR	CEAS3R3M50			
C207,C208	CERAMIC CAPACITOR	ACG1017-A			
C209,C210	CERAMIC CAPACITOR	CKCYB152K50			
C211,C212	CERAMIC CAPACITOR	CKCYB562K50			
C213,C214	ELECTR.CAPACITOR	CEAS010M50			
C215,C216	ELECTR.CAPACITOR	CEAS470M10			
C217,C218	ELECTR.CAPACITOR	CEAS4R7M50			
C219,C220	ELECTR.CAPACITOR	CEAS100M25			
C221,C222	ELECTROLYTIC CAPACIT	CEYA470M50			
C223,C224	ELECTR.CAPACITOR	CEAS100M25			
C233-C236	ELECTR.CAPACITOR	CEAS100M25			
C237	CERAMIC CAPACITOR	CKDYX104M25			
C238	CERAMIC CAPACITOR	CKDYF473Z50			
C239,C240	ELECTR.CAPACITOR	CEAS2R2M50			
C241-C244	ELECTR.CAPACITOR	CEAS100M25			
C245	ELECTR.CAPACITOR	CEASR22M50			
C247,C248	ELECTROLYTIC CAPACIT	CEYA470M50			
RESISTORS			SEMICONDUTORS		
△	R101,R102 METAL OXIDE RESISTOR	RS2LMFR22J	IC151 REGULATOR IC	NJM78M56FAS	
△	R103 METAL OXIDE RESISTOR	RS2LMF22J	Q152 TRANSISTOR	2SB560	
△	R105,R106 CARBON FILM RESISTOR	RD1/4PMF470J	Q554 TRANSISTOR	2SD438	
△	R121,R122 METAL OXIDE RESISTOR	RS1LMF8R2J	D151-D154 DIODE	S5566	
△	R129 CARBON FILM RESISTOR	RD1/2PMFL2R2J	D156 ZENER DIODE	RD33ESB2	
			D157 ZENER DIODE	RD6.2ESB	
			CAPACITORS		
			C151 ELECTROLYTIC CAPACIT	CEHAQ222M16	
			C152 ELECTROLYTIC CAPACIT	CEHAQ471M16	
			C153,C156 ELECTROLYTIC CAPACIT	CEHAQ221M50	
			C157 ELECTROLYTIC CAPACIT	CEHAQ220M50	
			C158 ELECTROLYTIC CAPACIT	CEHAQ470M50	
			C159 ELECTROLYTIC CAPACIT	CEHAQ221M10	
			RESISTORS		
△	R151,R152 METAL OXIDE RESISTOR	RS3LMF122J			
△	R153 METAL OXIDE RESISTOR	RS2LMF22J			
△	R157 CARBON FILM RESISTOR	RD1/4PMFL4R7J			
	Other resistors	RD1/8PM□□□J			
			DSP ASSEMBLY (AWK1445)		
			SEMICONDUCTORS		
			IC901-IC903 OP-AMP IC	RC4558DXP	
			IC904 AD CONVERTER IC	TD6726N	
			IC905 DSP IC	PD0055	
			IC906,IC907 MEMORY IC	MB81464-12	
			IC908 CONTROL MCU	PDG071A	
			Q901 TRANSISTOR	DTA143ES	
			D901,D902 DIODE	HSS104-02	
			COILS, FILTERS		
			F901,F902 FILTER	ATF1071	
			L901-L903 AXIAL INDUCTOR	LAU330K	
			L904 AXIAL INDUCTOR	LAUR22M	
			L905,L906 AXIAL INDUCTOR	LAU220K	
			L999 AXIAL INDUCTOR	LAU330K	
			CAPACITORS		
			C901,C902 ELECTR.CAPACITOR	CEAS2R2M50	
			C903,C904 MYLOR FILM CAPACITOR	CQMA563J50	
			C905,C906 ELECTR.CAPACITOR	CEAS220M25	
			C907,C908 PL.STYRENE CAPACITOR	CQSA202J50	
			C909,C910 CERAMIC CAPACITOR	CCCSL151J50	

Mark	Symbol & Description	Part No.
C911,C912	CERAMIC CAPACITOR	CCCSL180J50
C913-C916	CERAMIC CAPACITOR	CKCYX473M25
C917,C918	ELECTROLYTIC CAPACIT	CEANP470M16
C919	CERAMIC CAPACITOR	CCDCH100D50
C920	CERAMIC CAPACITOR	CCDCH330J50
C921	CERAMIC CAPACITOR	CKDYF473Z50
C922	CERAMIC CAPACITOR	CCDCH100D50
C923	CERAMIC CAPACITOR	CKDYF473Z50
C924	ELECTR.CAPACITOR	CEAS470M10
C925	CERAMIC CAPACITOR	ACG1022
C926	ELECTR.CAPACITOR	CEAS470M25
C927	CERAMIC CAPACITOR	ACG1022
C928-C930	ELECTR.CAPACITOR	CEAS470M25
C931	ELECTR.CAPACITOR	CEAS010M50
C932	CERAMIC CAPACITOR	ACG1022
C933	ELECTR.CAPACITOR	CEAS101M16
C934	ELECTR.CAPACITOR	CEAS101M50
C935	CERAMIC CAPACITOR	CKDYF473Z50
C936	CERAMIC CAPACITOR	ACG1021
C937,C938	CERAMIC CAPACITOR	CCDCH100D50
C939	CERAMIC CAPACITOR	ACG1022
C940	CERAMIC CAPACITOR	ACG1022
C941	CERAMIC CAPACITOR	CKDYF473Z50
C943,C944	ELECTR.CAPACITOR	CEAS101M50
C945	CERAMIC CAPACITOR	CKDYF473Z50
C947,C948	CERAMIC CAPACITOR	ACG1021
RESISTORS		
R952,R953	CARBON FILM RESISTOR	RD1/4PM390J
R955	RESISTOR ARRAY (10K)	RA7T103J
VR901	VR	VRTB6VS102
VR902	VR	VRTB6VS102
Other resistors		RD1/8PM□□□J
OTHERS		
CN6	CONNECTOR(15P)	KPE15
CN7	CONNECTOR(12P)	KPE12
X901	CRYSTAL RESONATOR	ASS1036
X902	CRYSTAL RESONATOR	ASS1035
X903	CRYSTAL RESONATOR	ASS1015

**1.RESISTORS :**

Indicated in Ω , 1/8, 1/4W., $\pm 5\%$ tolerance unless otherwise noted
 k ; $k\Omega$, M; $M\Omega$, (F); $\pm 1\%$, (G); $\pm 2\%$, (K); $\pm 10\%$, (M);
 $\pm 20\%$ tolerance.

A

2.CAPACITORS :

Indicated in capacity (μF)/voltage(V) unless otherwise noted p;
 pF . Indication without voltage is 50V except electrolytic capacitor.

3.VOLTAGE, CURRENT :

\boxed{V} ; Signal voltage at 70 W + 70 W, 8Ω output(1kHz).
 \boxed{V} ; DC voltage (V) at no input signal.
 Value in () is DC voltage at rated power.
 $\Leftrightarrow mA$; DC current at no input signal.

B

4.OTHERS :

\Rightarrow ; Signal route.
 \bigcirc ; Adjusting point.
 The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
 \ast marked capacitors and resistors have parts numbers.
 This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

C

5.SWITCHES :

DISPLAY ASSEMBLY

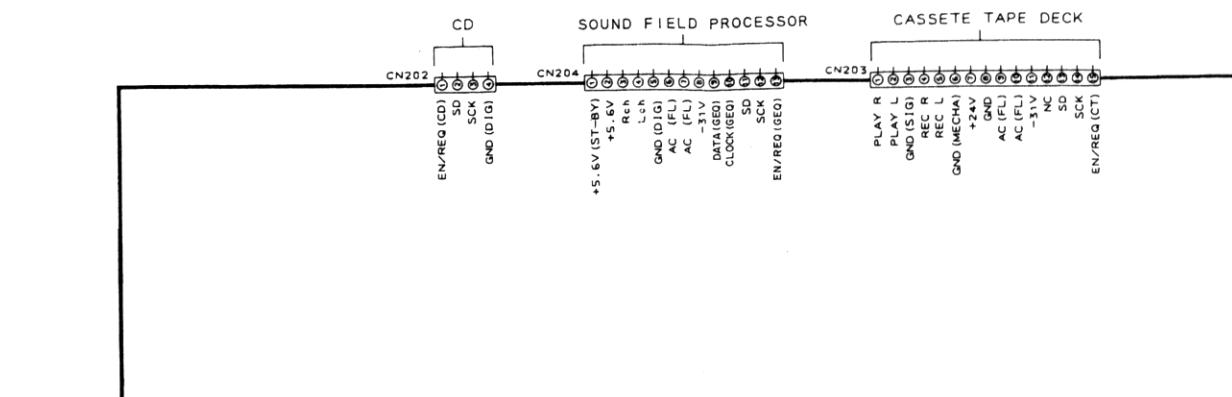
S701 : POWER	S708 : CD
S702 : LSS SET	S709 : LD
S703 : LSS MODE	S710 : VCR
S704 : PHONO	S712 : DIRECT MODE
S705 : TUNER	S713 : MUTING
S706 : TAPE	S714 : SPEAKERS A/B OR
S707 : DAT	A+B

D

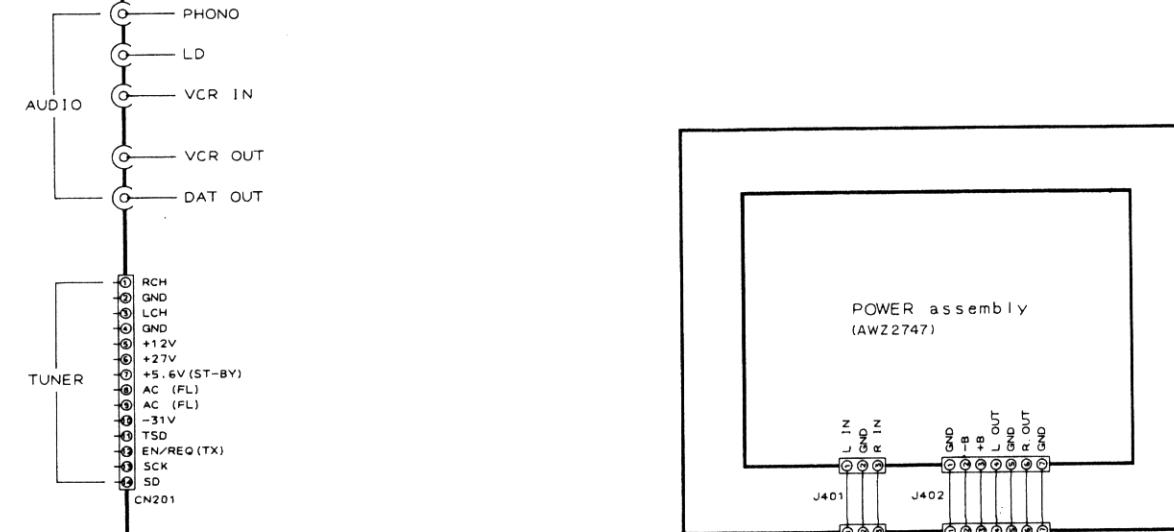
4. SCHEMATIC DIAGRAMS AND P.C.BOARD CONNECTION DIAGRAMS

4.1 OVER ALL SCHEMATIC DIAGRAM

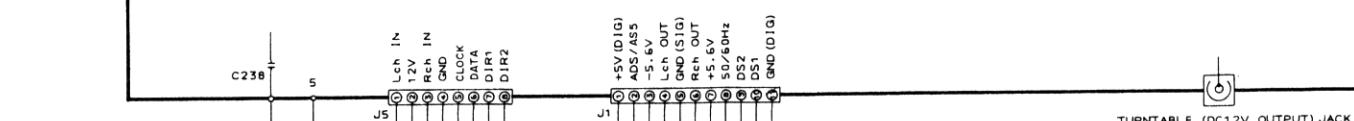
A



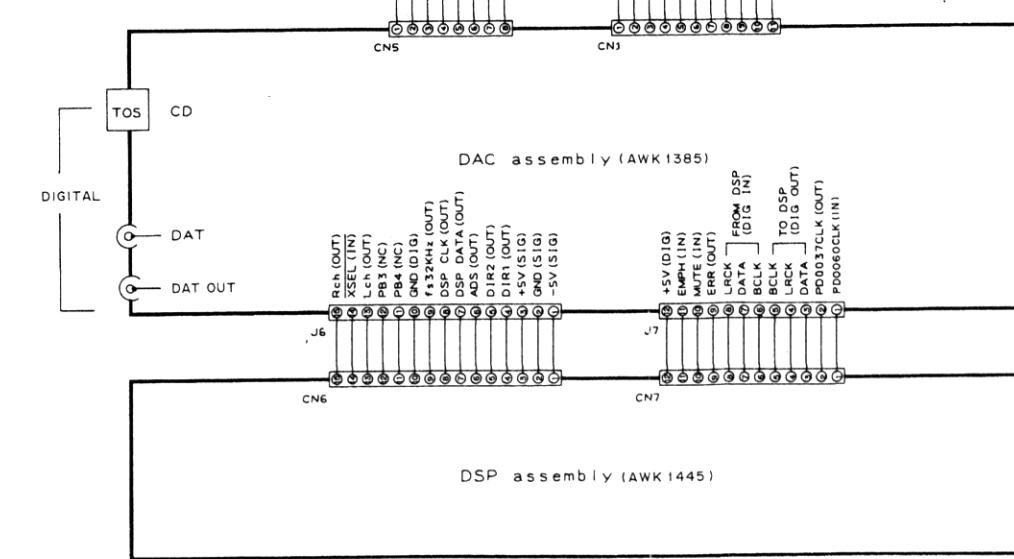
B



C



D



1

2

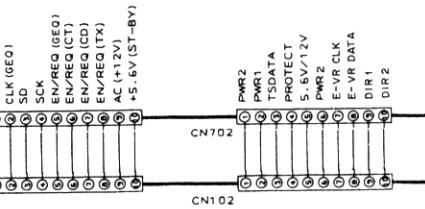
3

4

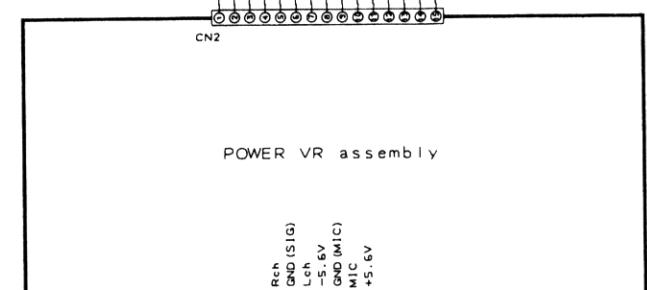
5

6

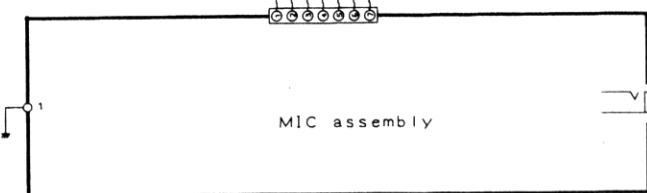
AF assembly (AWZ3403)



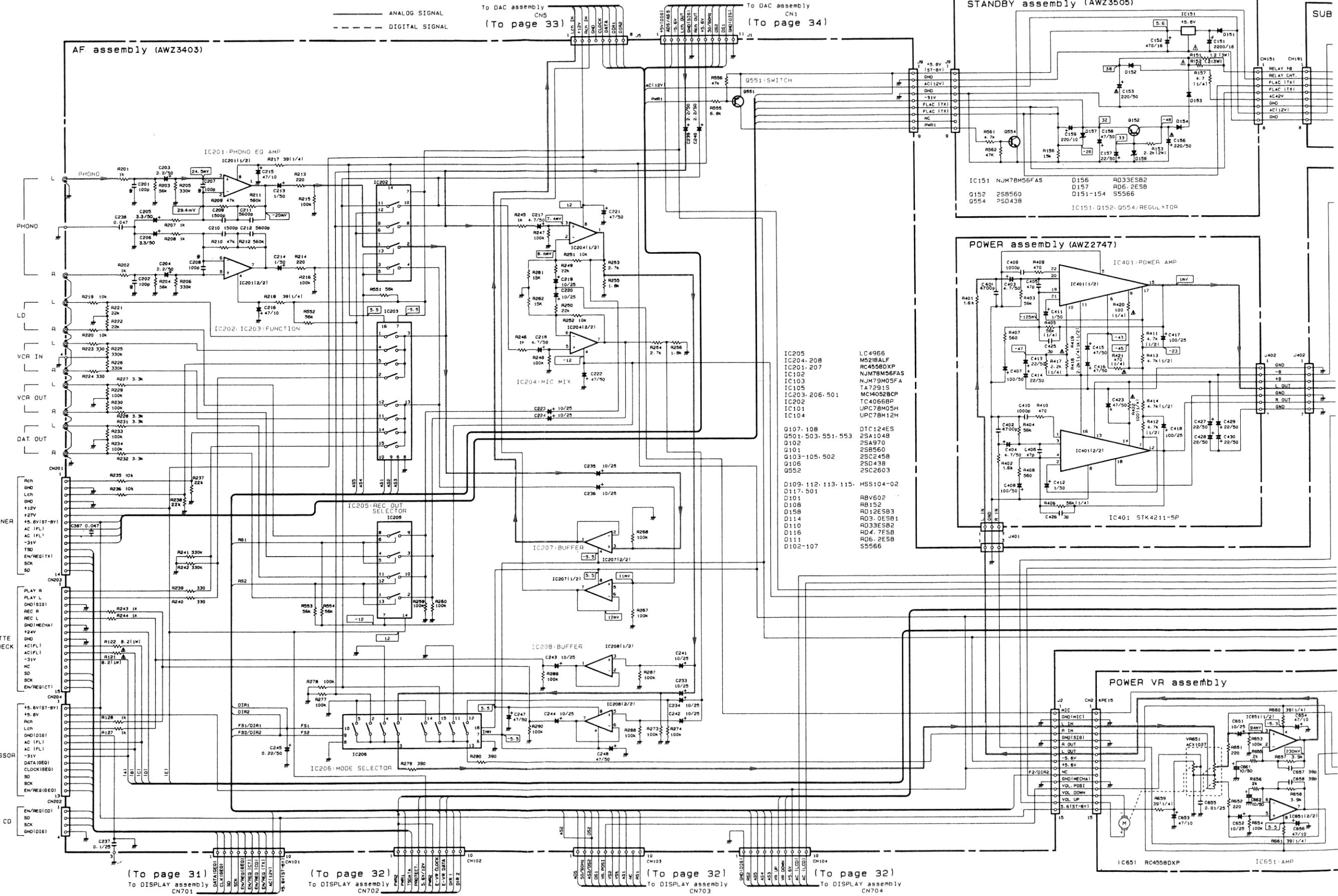
POWER VR assembly

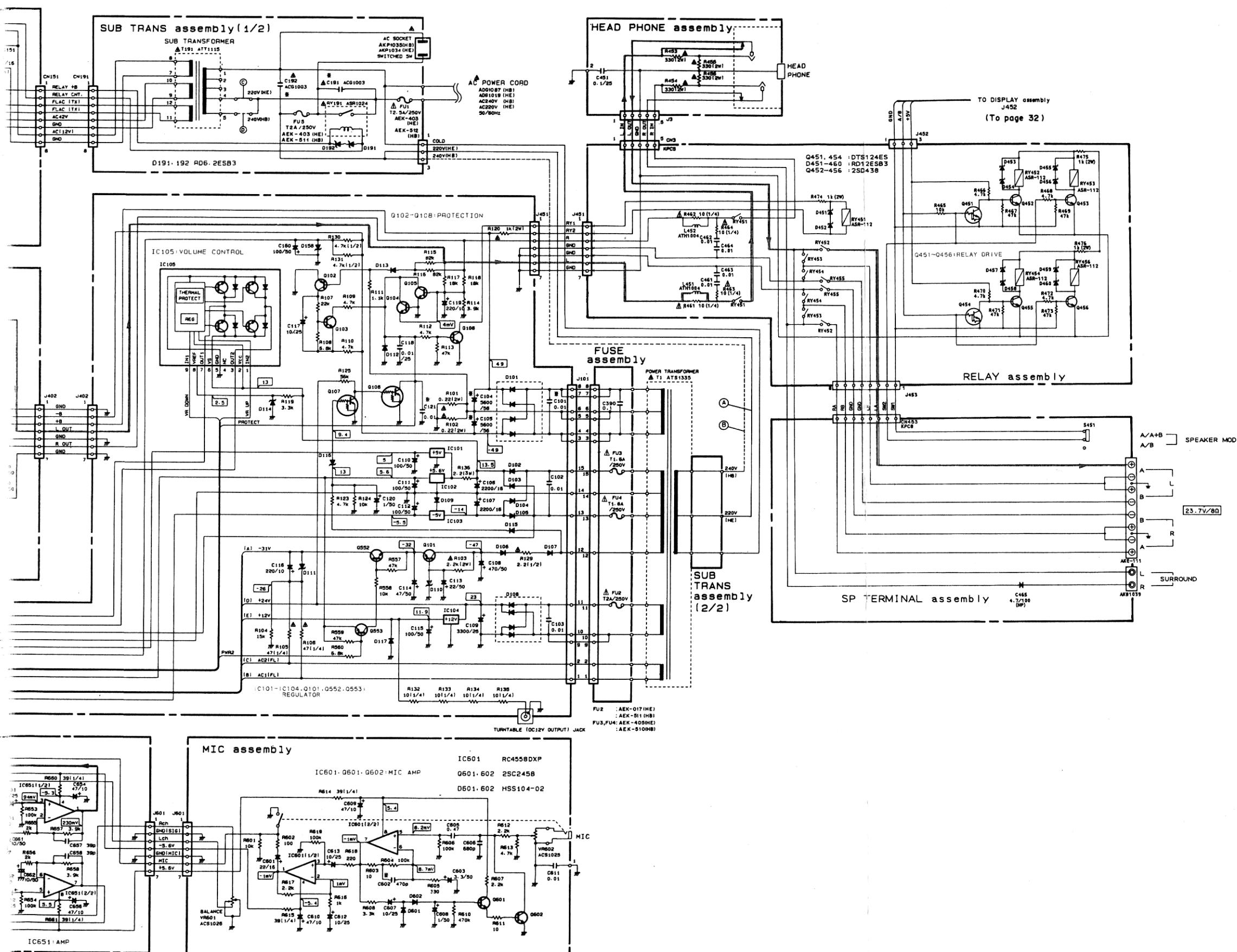


MIC assembly



4. 2 AF(AWZ3403), STANDBY(AWZ3505), SP TERMINAL, FUSE, POWER(AWZ2747), MIC, POWER VR, RELAY, SUB TRANS and HEAD PHONE assemblies





Line Voltage Selection (HE, HB AND HEWZIW TYPES)

Line voltage can be changed with the following steps.

1. Disconnect the AC power cord.
2. Remove the top cover.
3. Change the position of the connection wires to SUB TRANS ASSEMBLY (1/2) from SUB TRANS ASSEMBLY (2/2) as follows.

Voltage	Connection Wire(A)	Connection Wire(B)
220V	○	×
240V	×	○

○ : Be needed
× : Be needless

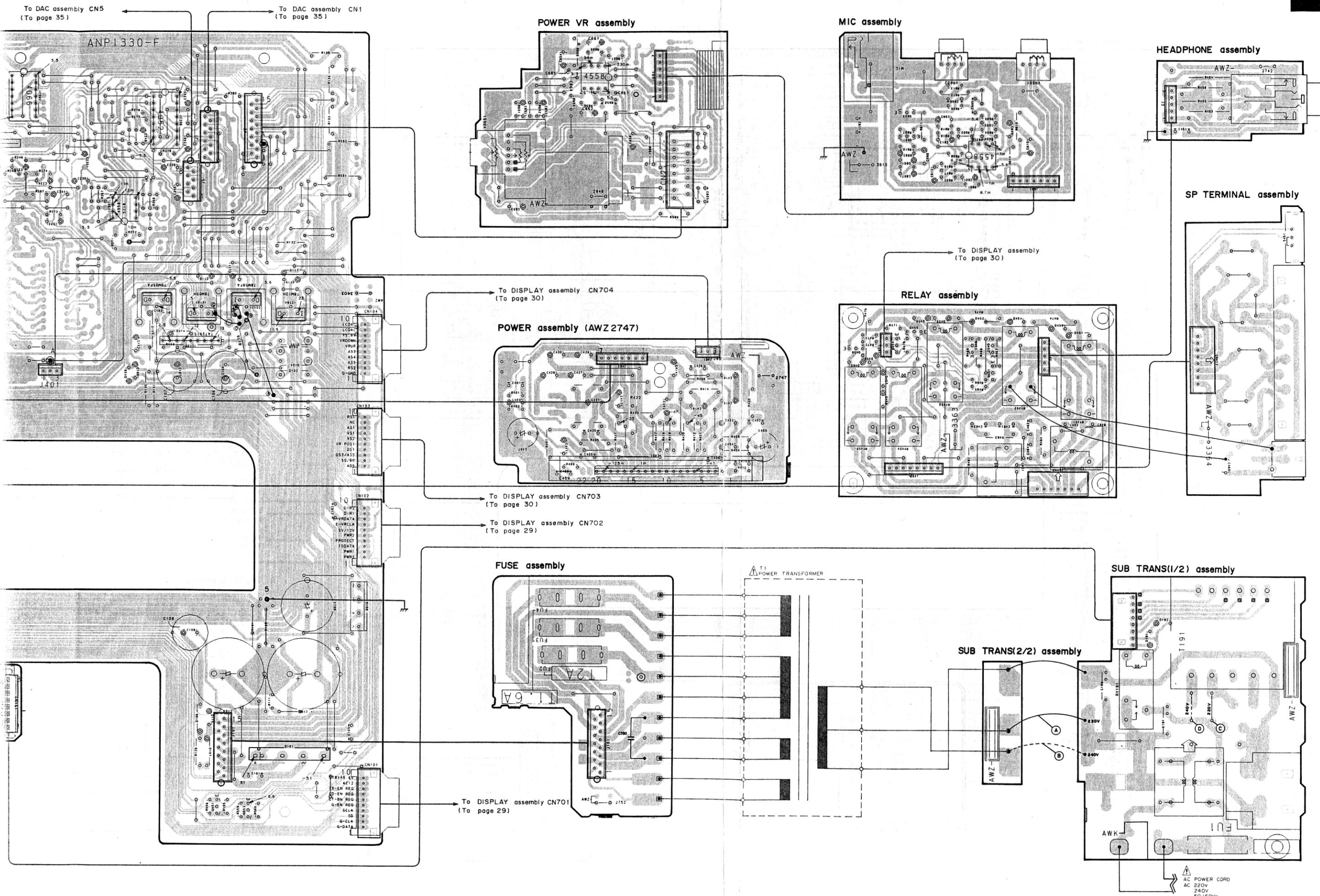
4. Change the position of the jumper wires (C) and (D) as follows. (SUB TRANS ASSEMBLY(1/2)).

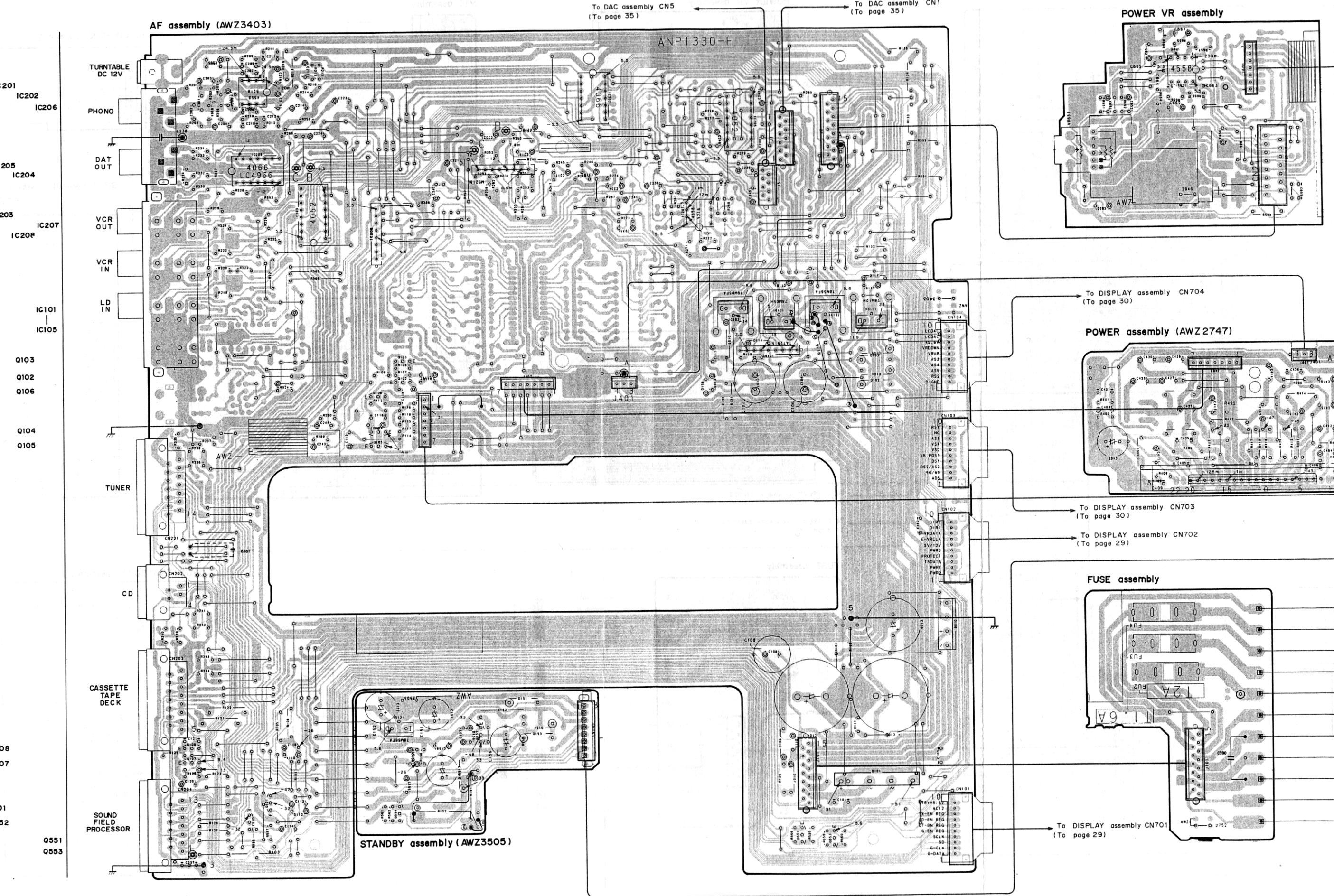
Voltage	Jumper Wire(C)	Jumper Wire(D)
220V	○	×
240V	×	○

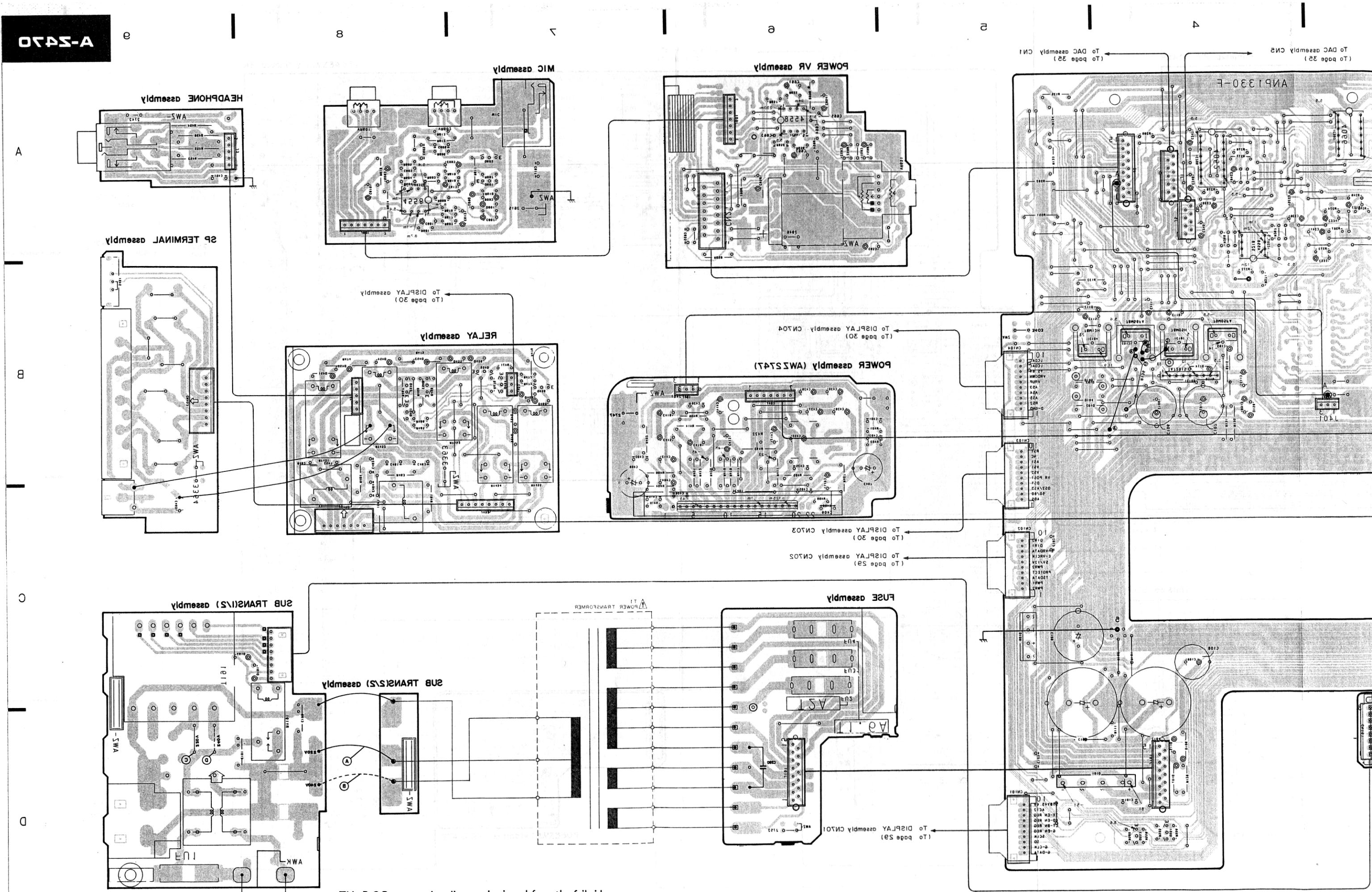
○ : Be needed
× : Be needless

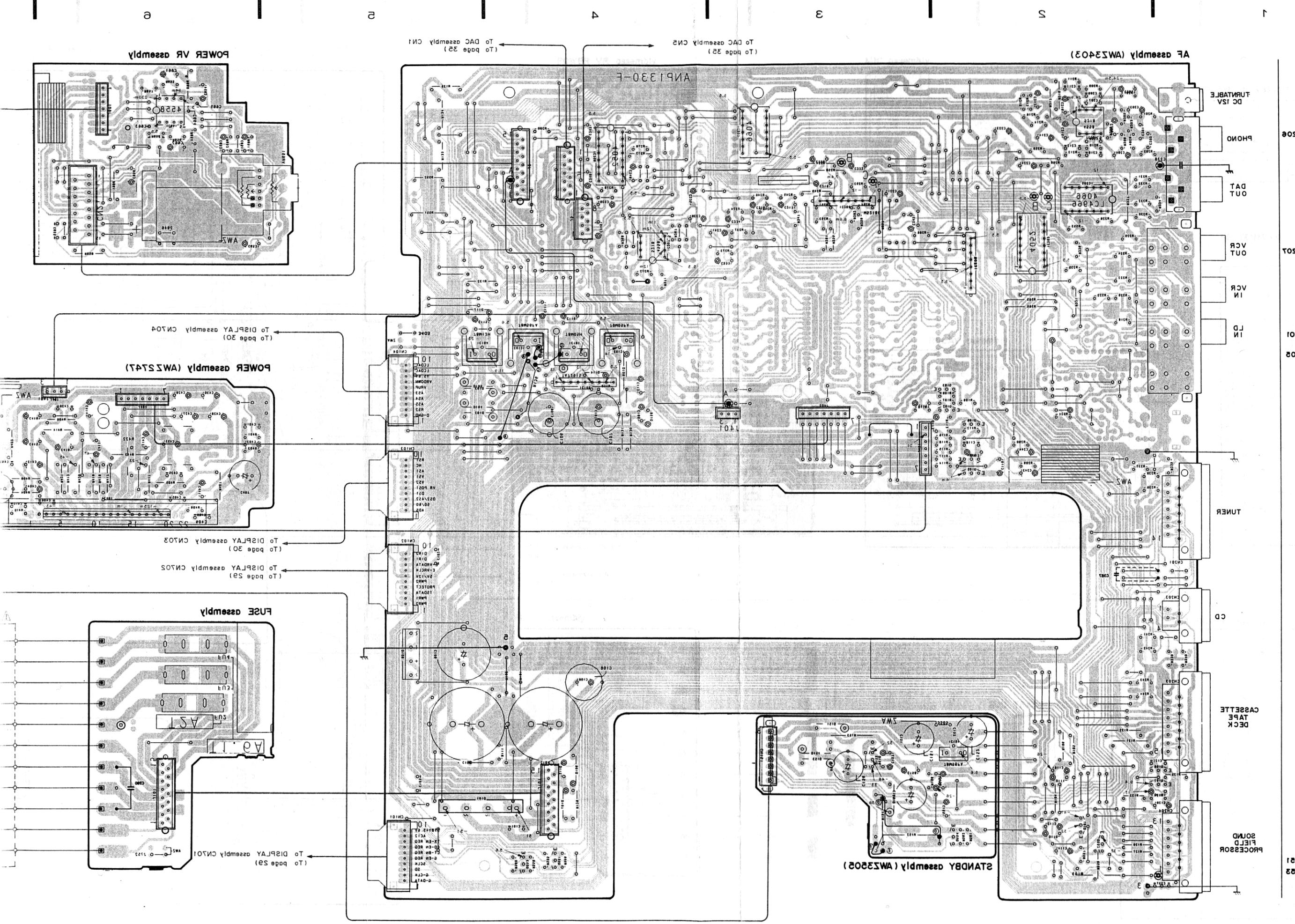
5. Stick the line voltage label on the rear panel.

Parts No.	Description
AXX-193	220V label
AXX-192	240V label



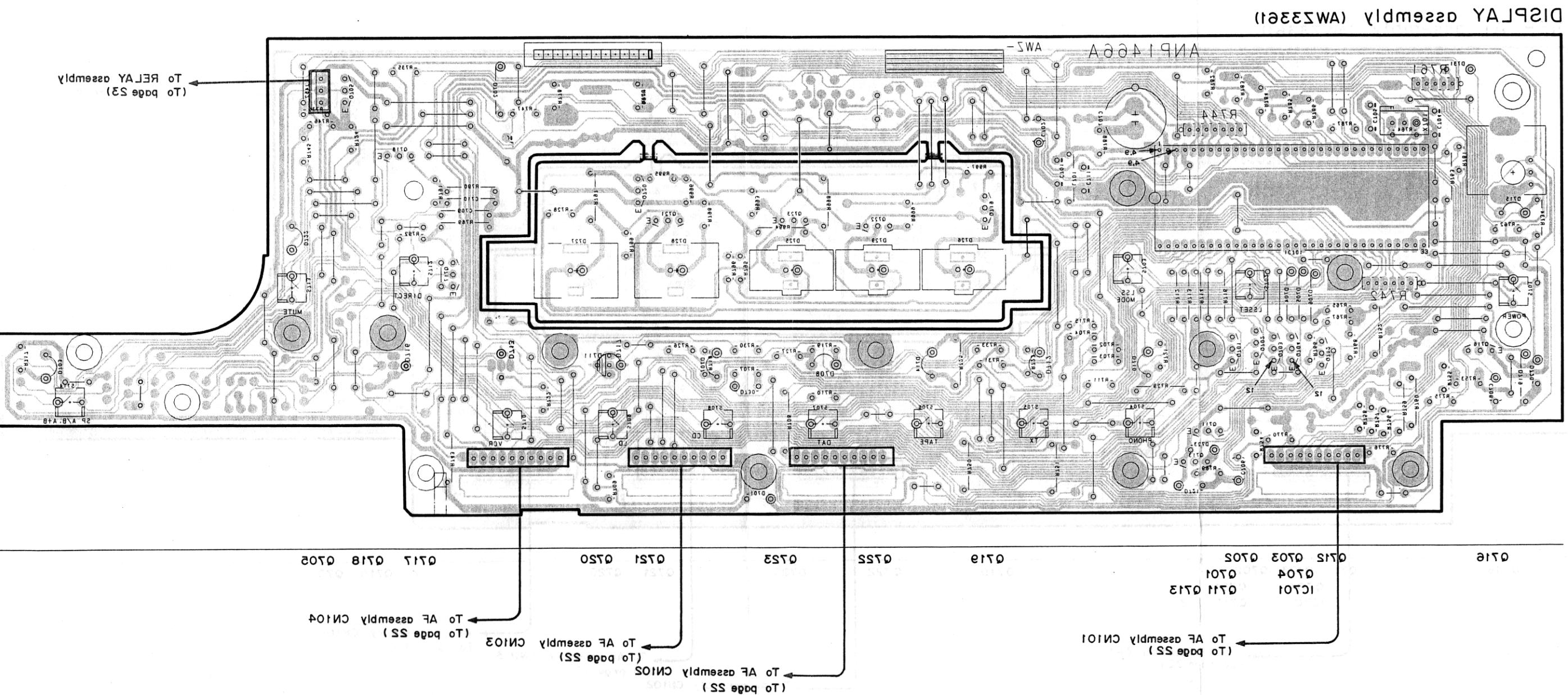






4.3 DISPLAY (AM23361) assembly

This P.C.B. connection diagram is viewed from the foil side.



4.3 DISPLAY (AWZ3361) assembly

NOTE

- This P.C.B connection diagram is viewed from the parts mounted side.
- The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
EO 0504	or	Transistor
Q215	or	Radiator type transistor
D203	D203	Diode
R237	R237	Resistor
C513	+	Capacitor (Polarity)
C518	||	Capacitor (Non-polarity)

Others

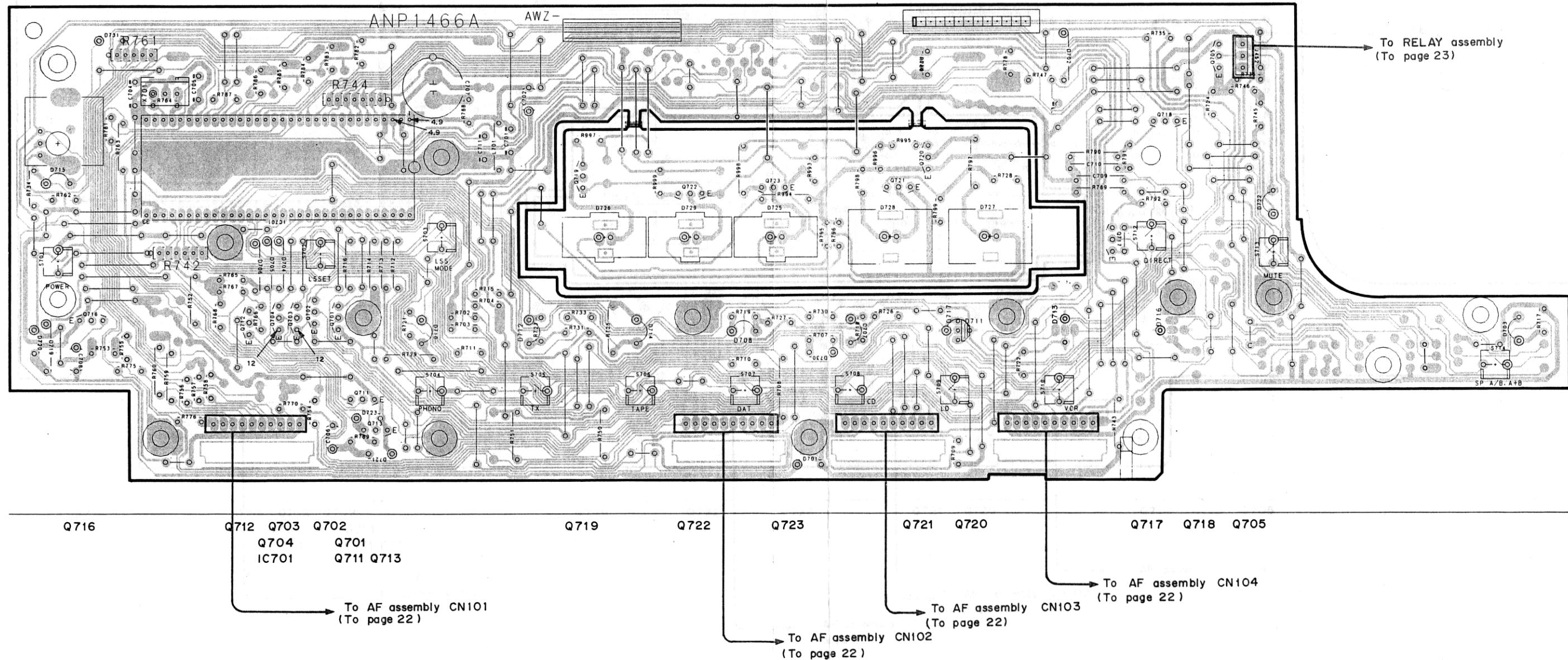
P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

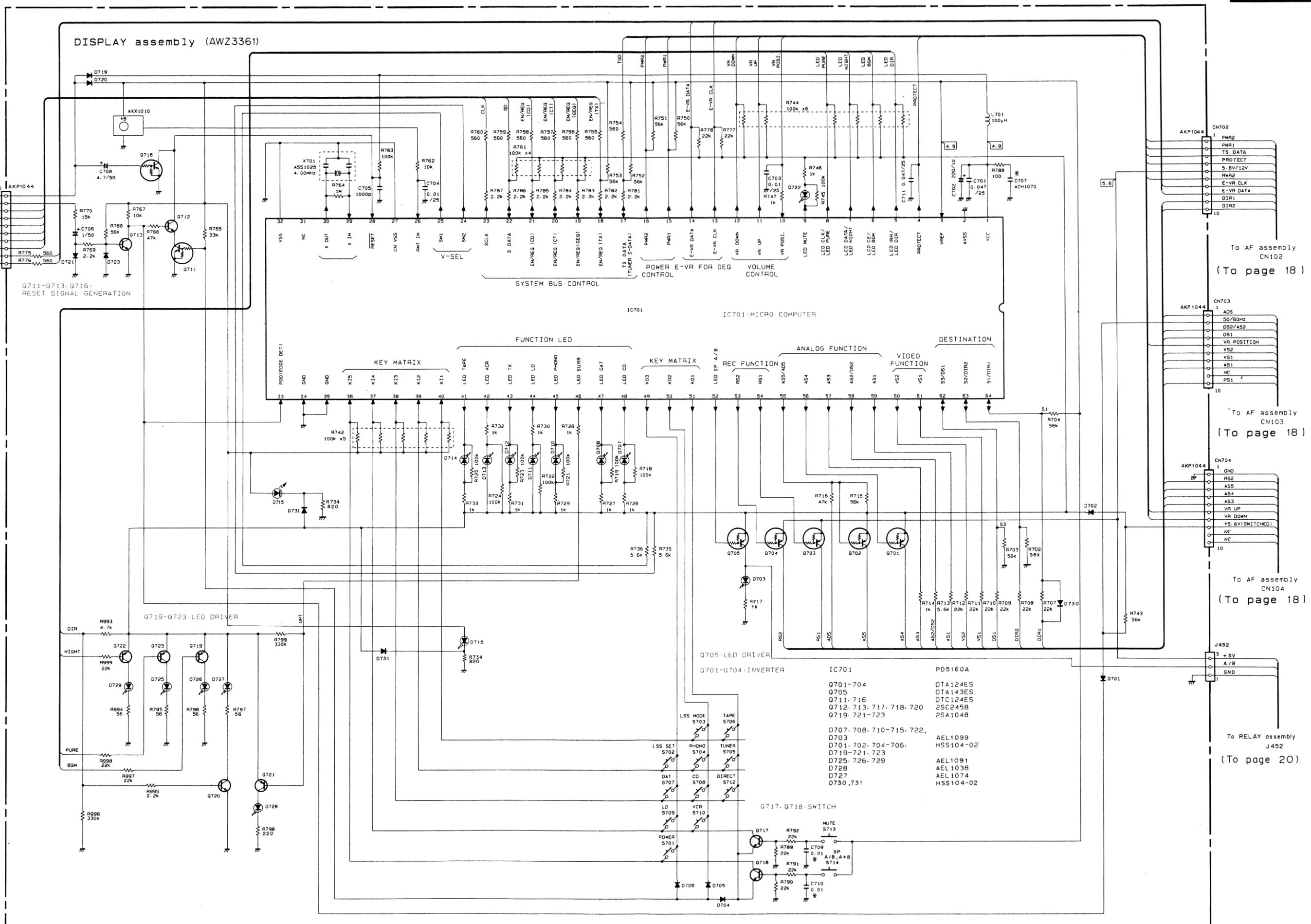
- The capacitor terminal marked with (double circles) shows negative terminal.
- The diode terminal marked with (double circles) shows cathode side.
- The transistor terminal to which E is affixed shows the emitter.

A

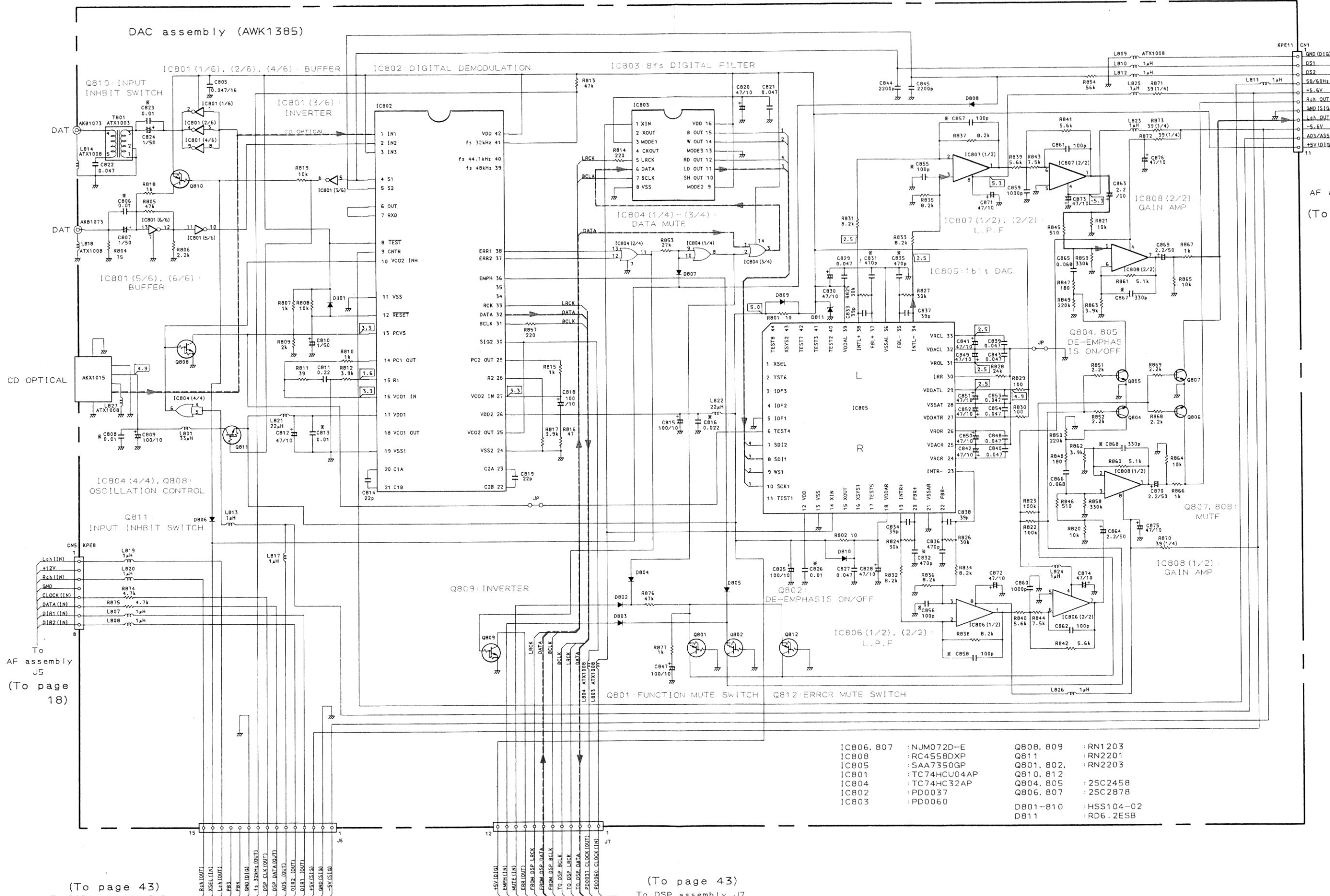
A

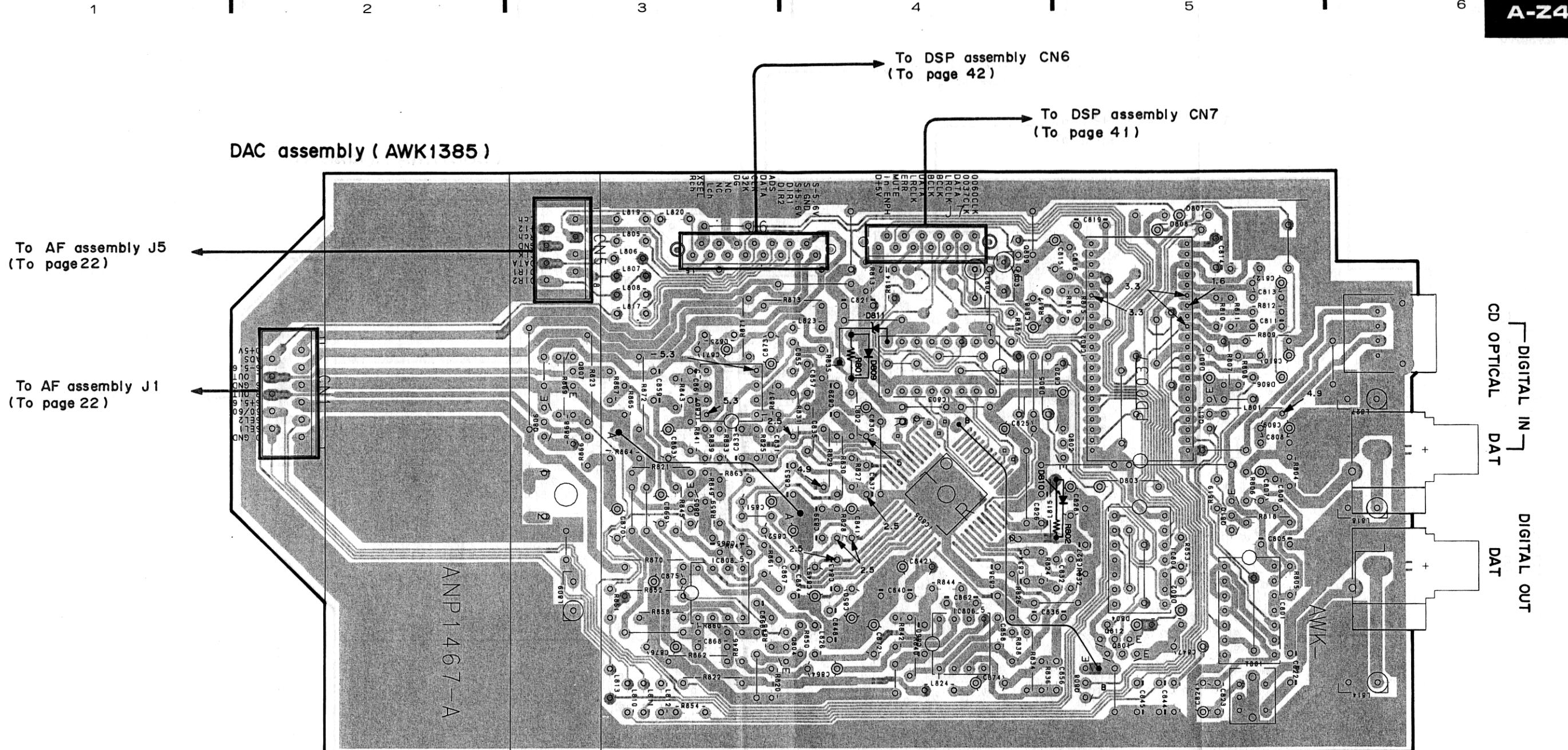
DISPLAY assembly (AWZ3361)





4.4 DAC(AWK1385) assembly





Q806 Q807

Q805 IC807
IC808 Q804IC803 Q809 Q802 IC802 Q811 Q810
IC805 IC806 Q808 IC804 IC801Q812
Q801

NOTE

- This P.C.B connection diagram is viewed from the parts mounted side.
- The parts which have been mounted on the board can be replaced with those shown with the corresponding wiring symbols listed in the following Table.

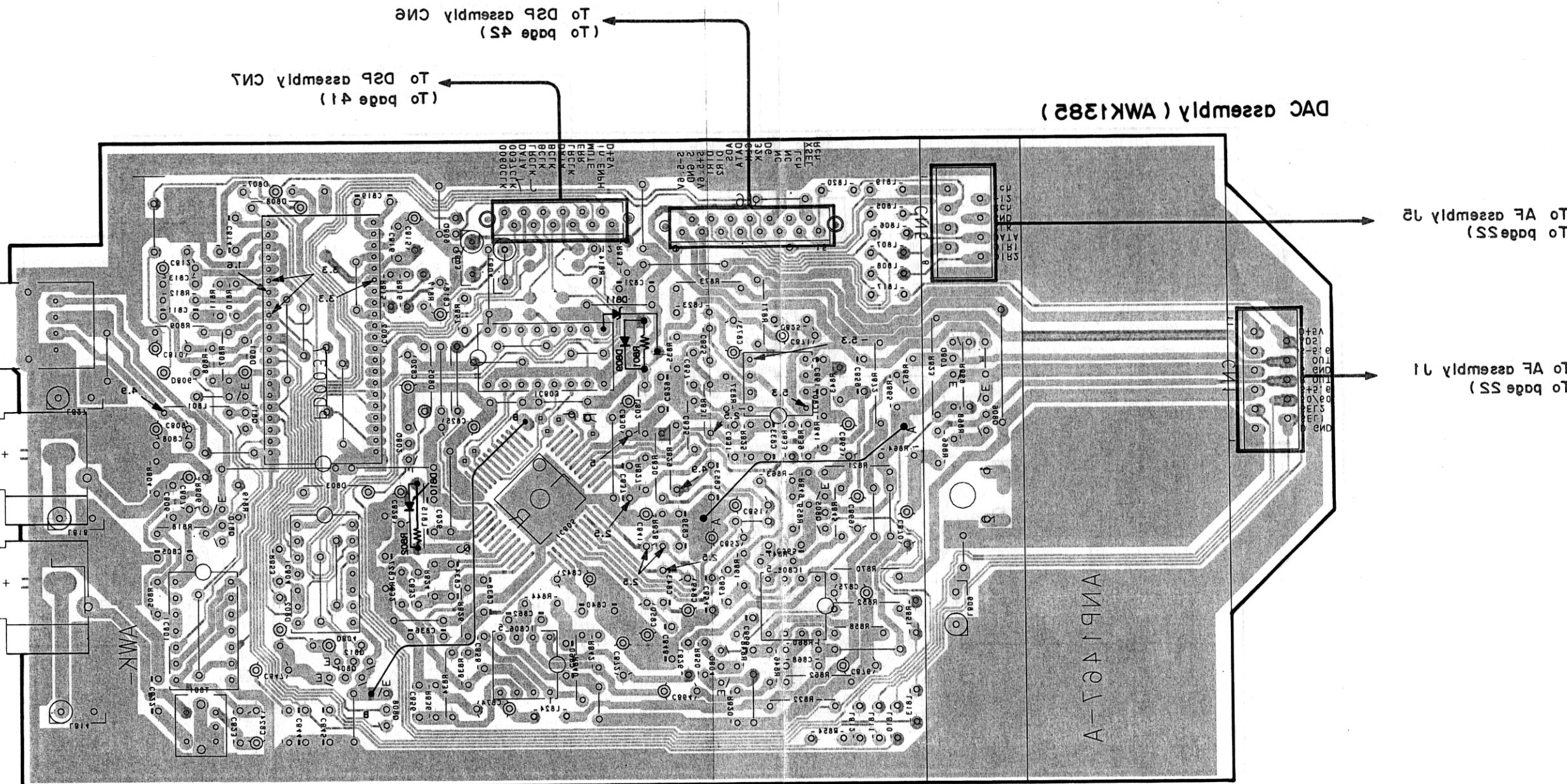
P.C.B. pattern diagram indication	Corresponding part symbol	Part Name
Q504		Transistor
Q215		Radiator type transistor
D203		Diode
R237		Resistor
C513		Capacitor (Polarity)
C518		Capacitor (Non-polarity)

P.C.B. pattern diagram indication	Part Name
IC	IC
S	Switch
RY	Relay
L	Coil
F	Filter
VR	Variable resistor or Semi-fixed resistor

- The capacitor terminal marked with shows negative terminal.
- The diode terminal marked with shows cathode side.
- The transistor terminal to which E is affixed shows the emitter.

DIGITAL IN

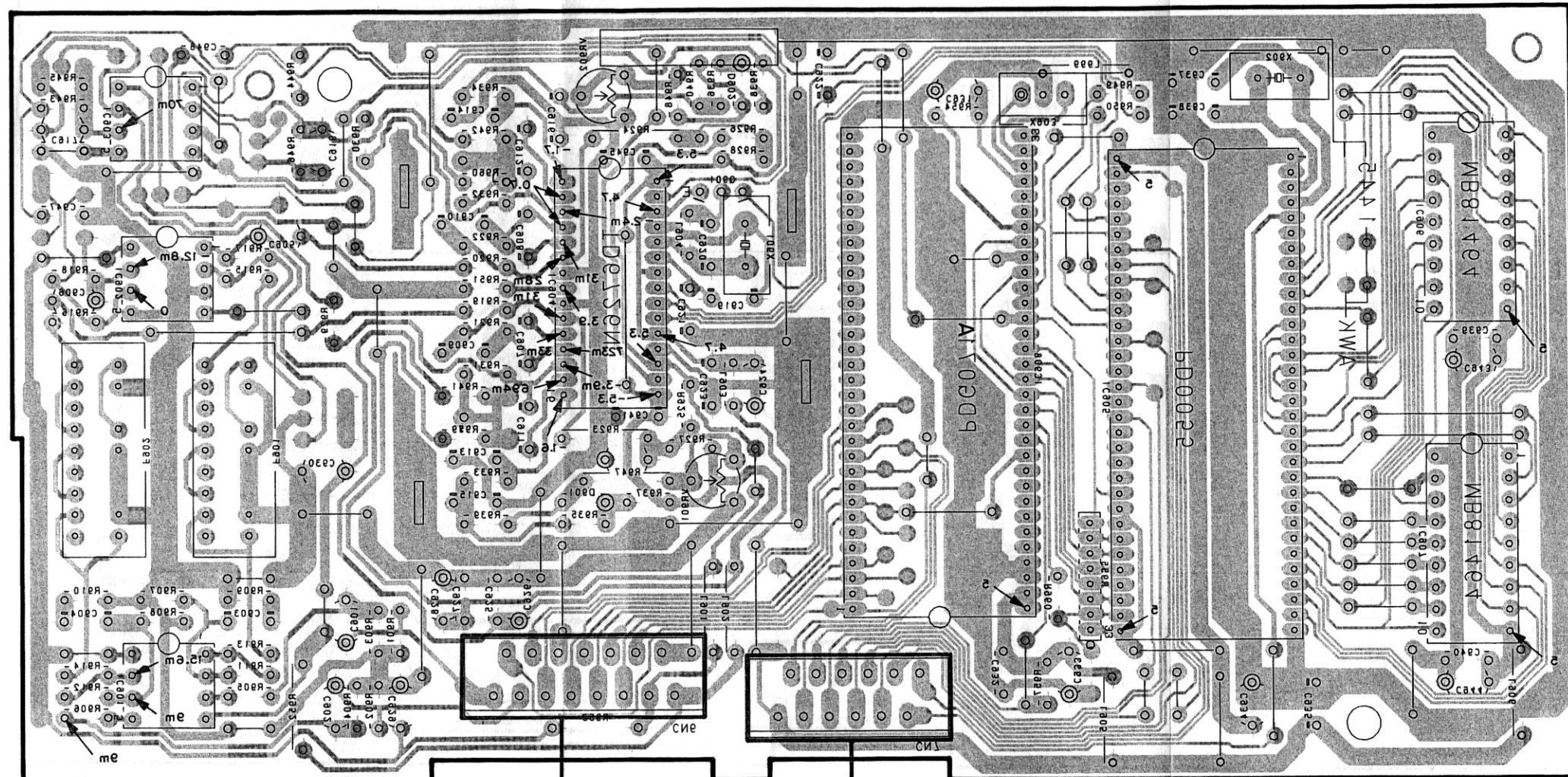
DIGITAL OUT



Q801	Q815	I808	I804	I802	I806	I803	I802	I805	I803	I802	I806	I804	I801
------	------	------	------	------	------	------	------	------	------	------	------	------	------

This P.C.B. connection diagram is viewed from the foil side.

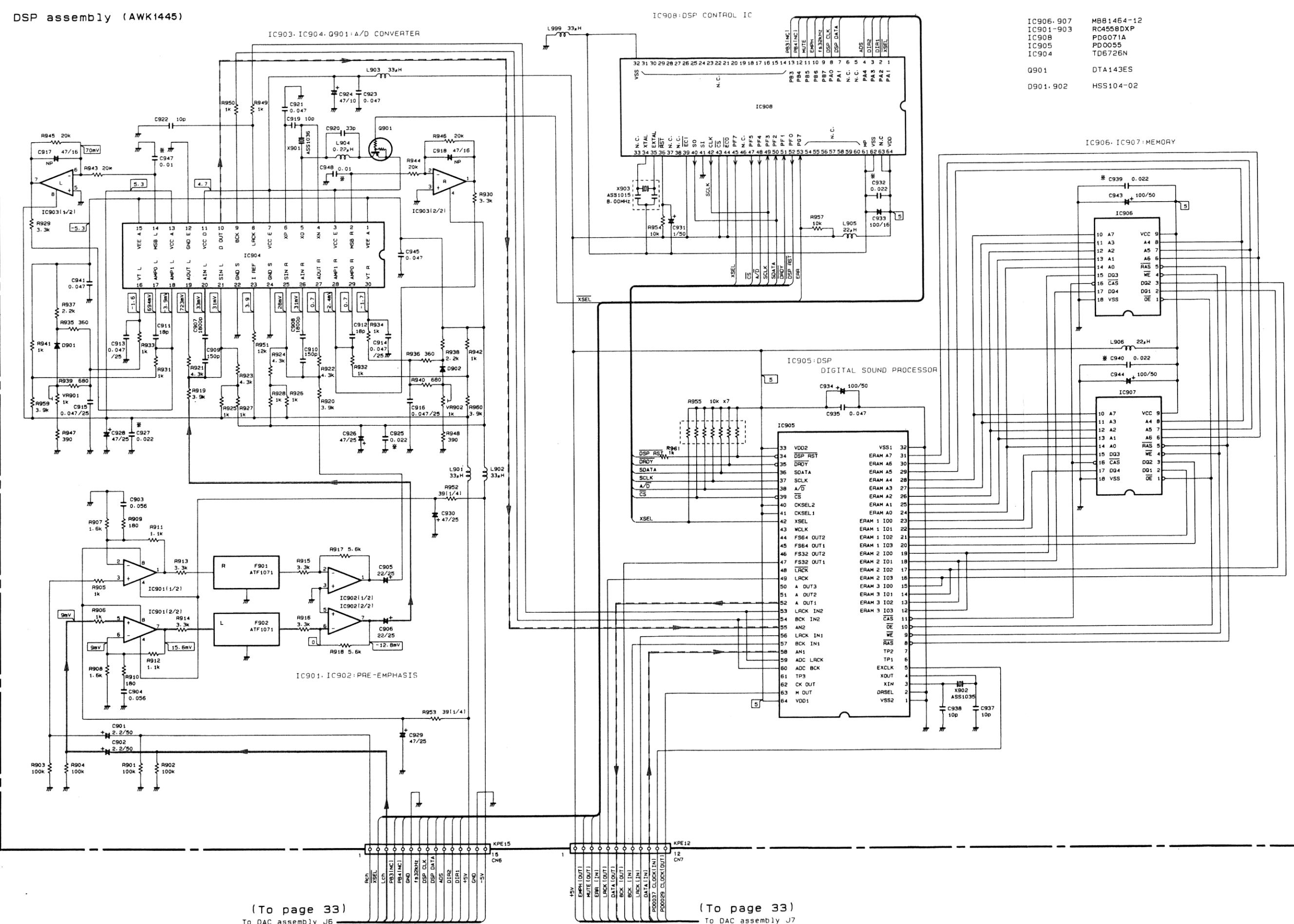
DSB Assembly (AWK ID45)



To DAC assembly 16
(To badge 36)

To page 35) To DAC assembly 72

This P.C.B. connection diagram is viewed from the foil side.



5. ADJUSTMENTS

1. If the SP-Z570(sound field processor) is connected to the A-Z470, disconnect them. (This makes DSP processing in the A-Z470 flat.)
2. Input 1kHz/600mV to LD INPUT AUDIO Lch and Rch, then turn function to LD, followed by turning the main VR into the center position.
3. Adjust the VR901(Rch) and VR902(Lch) until the distortion of the Lch and Rch is minimized(0.15% or less) at the speaker output.

5. RÉGLAGE

1. Si le SP-Z570(processeur de champ d'ambiance) est connecté au A-Z470, les déconnecter. (Ceci neutralise le traitement DSP dans le A-Z470.)
2. Enter 1kHz/600mV aux bornes gauche et droite d'entrée audio LD(LD INPUT AUDIO), mettre le sélecteur de fonction sur "LD", suivi du réglage de la résistance variable(VR) principale à la position centrale.
3. Régler VR901 (D) et VR902 (G) jusqu'à ce que la distorsion des canaux gauche et droit soit réduite (0,15% ou moins) à la sortie des haut-parleurs.

5. AJUSTE

1. Si el SP-Z570(procesador de campo sonoro) está conectado al A-Z470, desconéctelos. (De este modo el procedo DSP en el A-Z470 será plano.)
2. Introduzca 1kHz/600mV en los canales izquierdo y derecho de INPUT AUDIO del LD, cambie entonces la función a LD, y gire luego la VR principal a la posición central.
3. Ajuste la VR901 (canal derecho) y VR902 (canal izquierdo) hasta que la distorsión de los canales izquierdo y derecho se minimice(0.15% o menos) en la salida del altavoz.

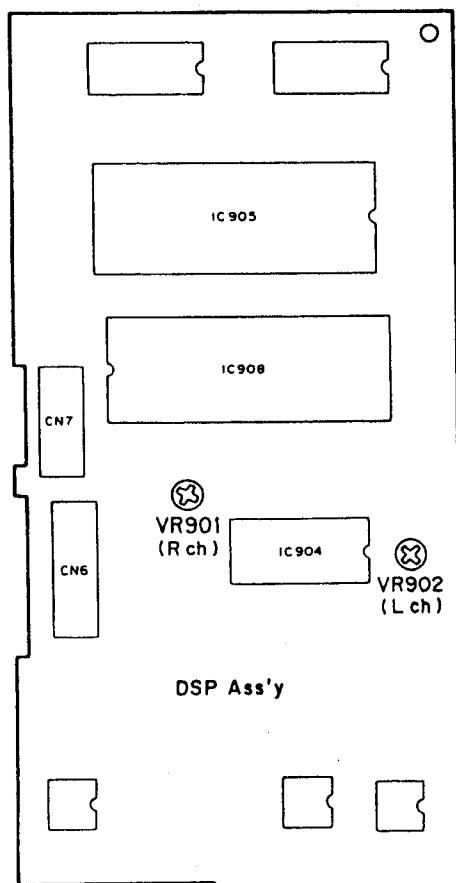


Fig. 5-1. Adjustment location

Fig. 5-1. Emplacements de réglage

Fig. 5-1. Puntos de ajustes

6. FOR HB AND HEWZIW TYPES

NOTES:

- Parts without part number cannot be supplied.
- Parts marked by “●” are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- The △ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

CONTRAST OF MISCELLANEOUS PARTS

The A-Z470/HB and HEWZIW types are the same as the A-Z470/HE type with the exception of the following sections.

Mark	Symbol & Description	Part No.			Remarks
		HE type	HB type	HEWZIW type	
●	AF assembly	AWZ3403	AWZ3403	AWZ3406	
	POWER assembly	AWZ2747	AWZ2747	AWZ2744	
	SP TERMINAL assembly	Non supply	Non supply	Non supply	
	POWER VR assembly	Non supply	Non supply	Non supply	
	HEAD PHONE assembly	Non supply	Non supply	Non supply	
	SUB TRANS assembly	Non supply	Non supply	Non supply	
	MIC assembly	Non supply	Non supply	Non supply	
	AC power cord	ADG1019	ADG1087	ADG1012	
	FU1 Fuse	AEK-403	AEK-512	AEK-403	
	FU2 Fuse	AEK-017	AEK-511	AEK-017	
△	FU3,4 Fuse	AEK-405	AEK-510	AEK-405	
	FU5 Fuse	AEK-403	AEK-511	AEK-403	
	PWB Screw	ABA-283	ABA-283	.....
	Operating instructions (Dutch, Swedish, Spanish, Portuguese)	ARC1249	.....	.....
	Operating instructions (English, German, French, Italian)	ARE1181	.....	.....
	Operating instructions (English)	.....	ARB1291	.....
	Operating instructions (German)	.....	.....	ARC1247	

AF assembly (AWZ3406)

The AF assembly(AWZ3406) is the same as the AF assembly(AWZ3403) with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		AWZ3403	AWZ3406	
	C102, C103 C341-344, 347-349, 383, 386, 387 C345, 346 C351, 352 C353, 354, 357, 358, 361, 362 C355, 356, 359, 360, 363, 364, 373-382 C384, 385 R201, 202	CKDYF103Z50 RD1/8PM102J	CKDYF473Z50 CKDYF473Z50 CQMA104K50 ACG1020 CKDYB331K50 ACG1018 CKDYB391K50 RD1/8PM222J	

POWER assembly (AWZ2744)

The POWER assembly(AWZ2744) is the same as the POWER assembly(AWZ2747) with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		AWZ2747	AWZ2744	
	C405, 406 C431, 432 C433, 434 C435, 436 R425	CCDSL470J50	CCDSL221J50 CCDSL101K500 CCDSL101J50 CKDYB331K50 RD1/8PM100J	

SP TERMINAL assembly

The SP TERMINAL assembly (HEWZIW type) is the same as the SP TERMINAL assembly (HE and HB types) with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		HE, HB types	HEWZIW type	
	C365, 366 C471-482 L353, 354	..... ..... .....	CFTXA103J50 CQMXA103J100 ATH1002	

POWER VR assembly

The POWER VR assembly (HEWZIW type) is the same as the POWER VR assembly (HE and HB types) with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		HE, HB types	HEWZIW type	
	C663-665	.....	CKDYB103K50	
	C666, 667	.....	CCDSL470J50	
	R700	.....	RD1/8PM100J	

HEAD PHONE assembly

The HEAD PHONE assembly (HEWZIW type) is the same as the HEAD PHONE assembly (HE and HB types) with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		HE, HB types	HEWZIW type	
	C369, 370	.....	CKDYX473M25	

SUB TRANS assembly

The SUB TRANS assembly (HB type) is the same as the SUB TRANS assembly (HE and HEWZIW types) with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		HE, HEWZIW types	HB type	
	AC socket (OUTLET 1P)	AKP1034	AKP1035	

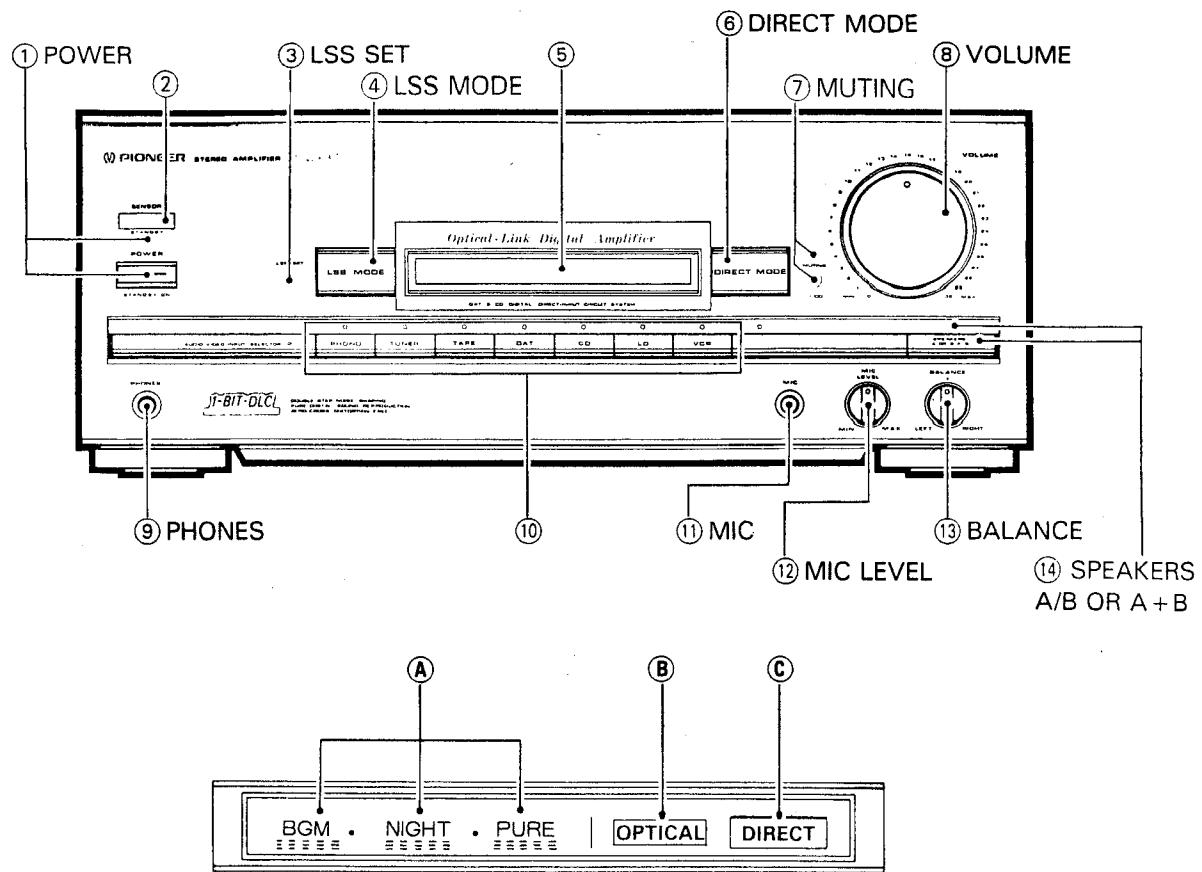
MIC assembly

The MIC assembly (HEWZIW type) is the same as the MIC assembly (HE and HB types) with the exception of the following sections.

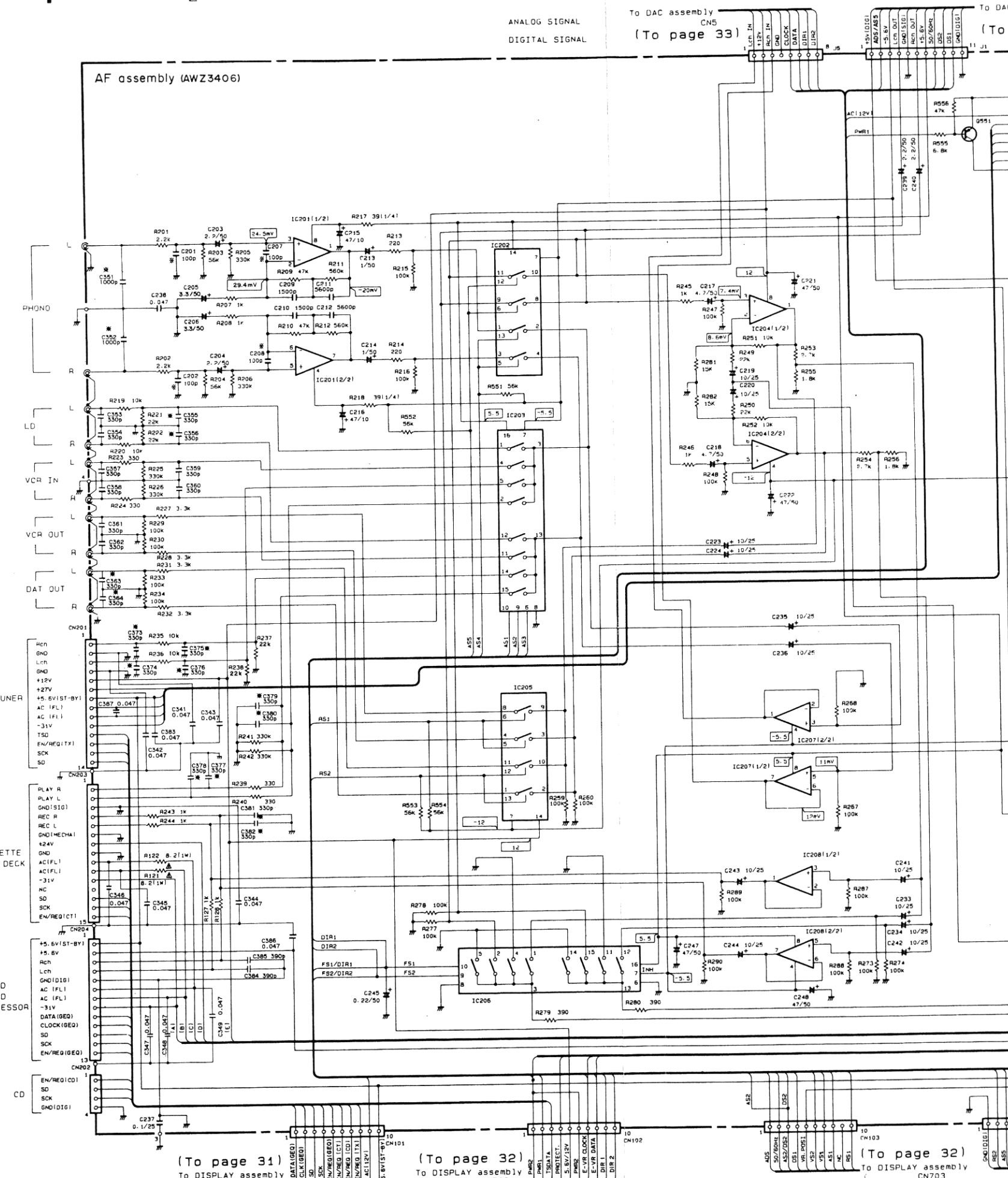
Mark	Symbol & Description	Part No.		Remarks
		HE, HB types	HEWZIW type	
	C371	.....	ACG1020	
	C372	.....	ACG1017	
	C604	ACG1017	ACG1020	
	L601	.....	LAUR56M	
	R351	.....	RD1/8PM222J	

7. PANEL FACILITIES

Front panel and display section



AF assembly (AWZ3406)



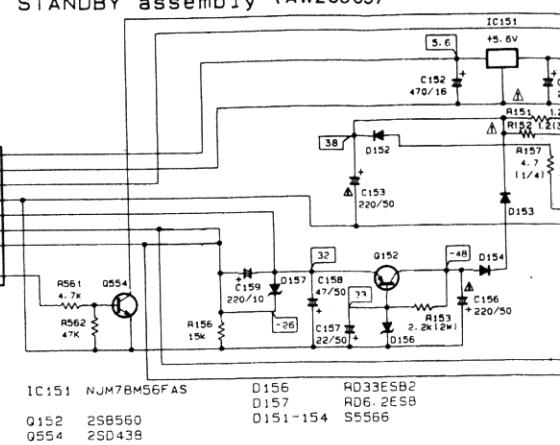
ANALOG SIGNAL
DIGITAL SIGNAL
(To page 33)
TO DAC assembly
CN5

TO DAC assembly
CN1
(To page 34)
(To page 33)
TO DISPLAY assembly
CN701

ANALOG SIGNAL
DIGITAL SIGNAL
(To page 33)
TO DAC assembly
CN5

TO DAC assembly
CN1
(To page 34)
(To page 33)
TO DISPLAY assembly
CN701

STANDBY assembly (AWZ3505)

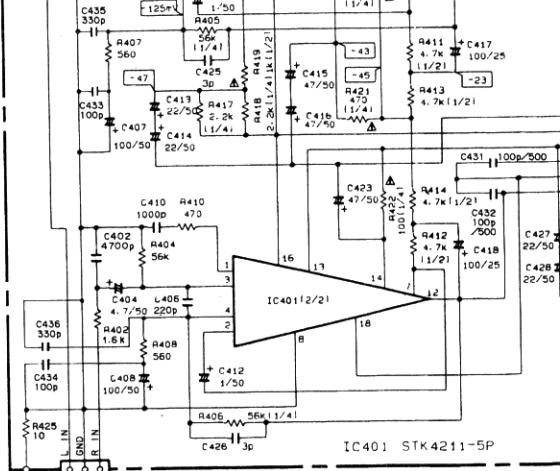


POWER assembly (AWZ2744)

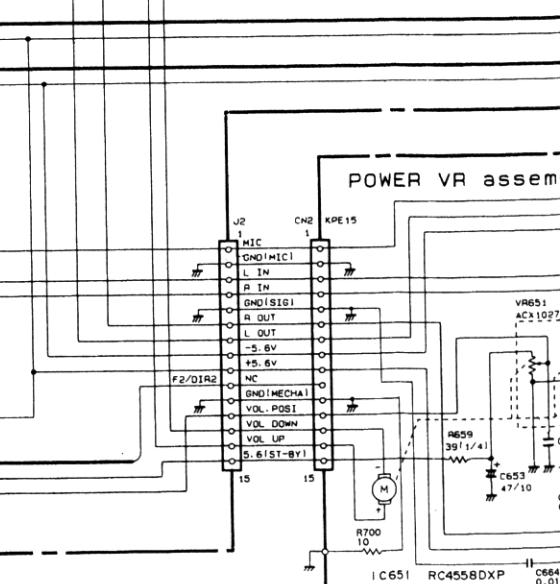
IC205 LC4966
IC204, 208 MS210ALF
IC201, 207 RC4558DXP
IC102 NJM78M56FAS
IC103 NJM79M56FA
IC105 TA7291S
IC203, 206, 501 MC4052BCP
IC202 TQ406BPP
IC101 UPC78M05H
IC104 UPC78M12H

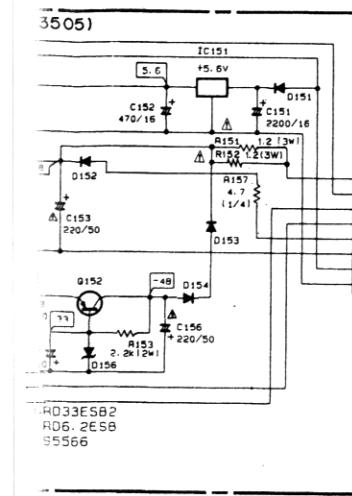
Q107, 108 DTC124ES
Q101, 503, 551, 553 2SA1048
Q102 2SA970
Q101 2SB560
Q103-105, 502 2SC2458
Q106 2SD438
Q552 2SC2603

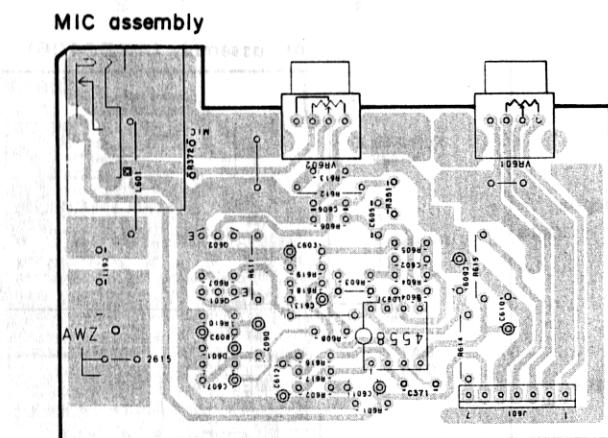
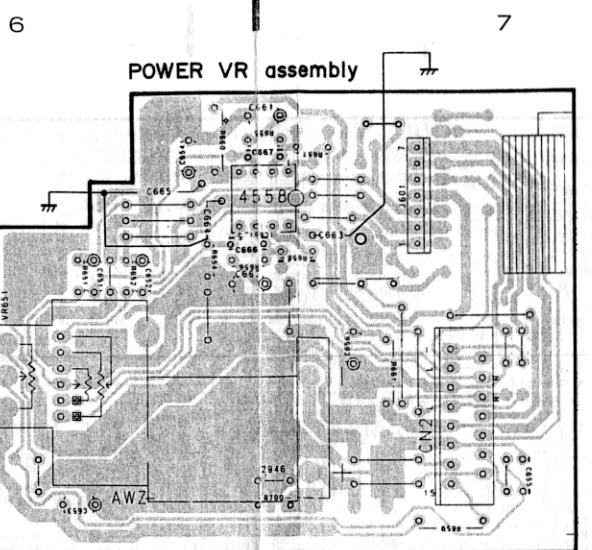
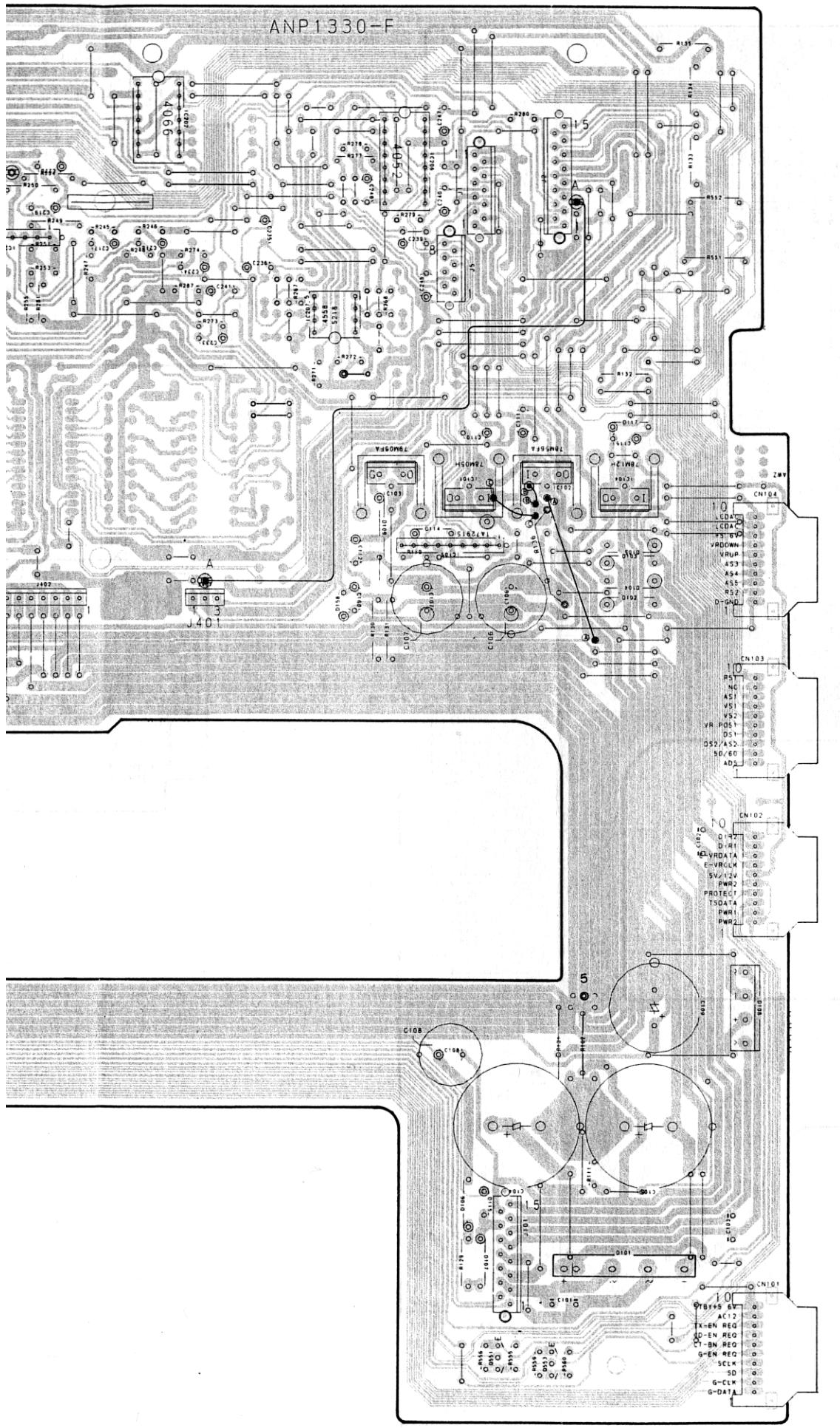
D109, 112, 113, 115 HSS104-02
D117, 501 RA8602
D101 RA8152
D108 RA012ESB3
D114 RA03.0ESB1
D110 RA033ESB2
D115 RA04.7ESB
D111 RA06.2ESB
S5566



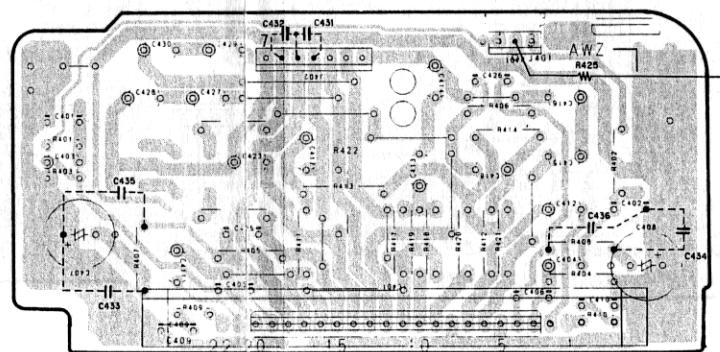
POWER VR assembly



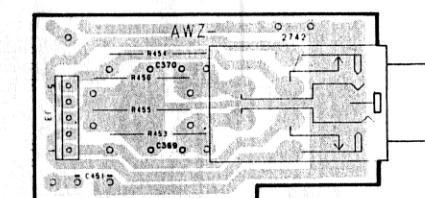




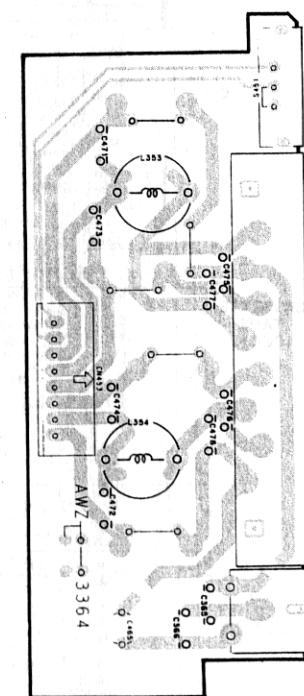
POWER assembly (AWZ2744)



HEADPHONE assembly



SP TERMINAL assembly



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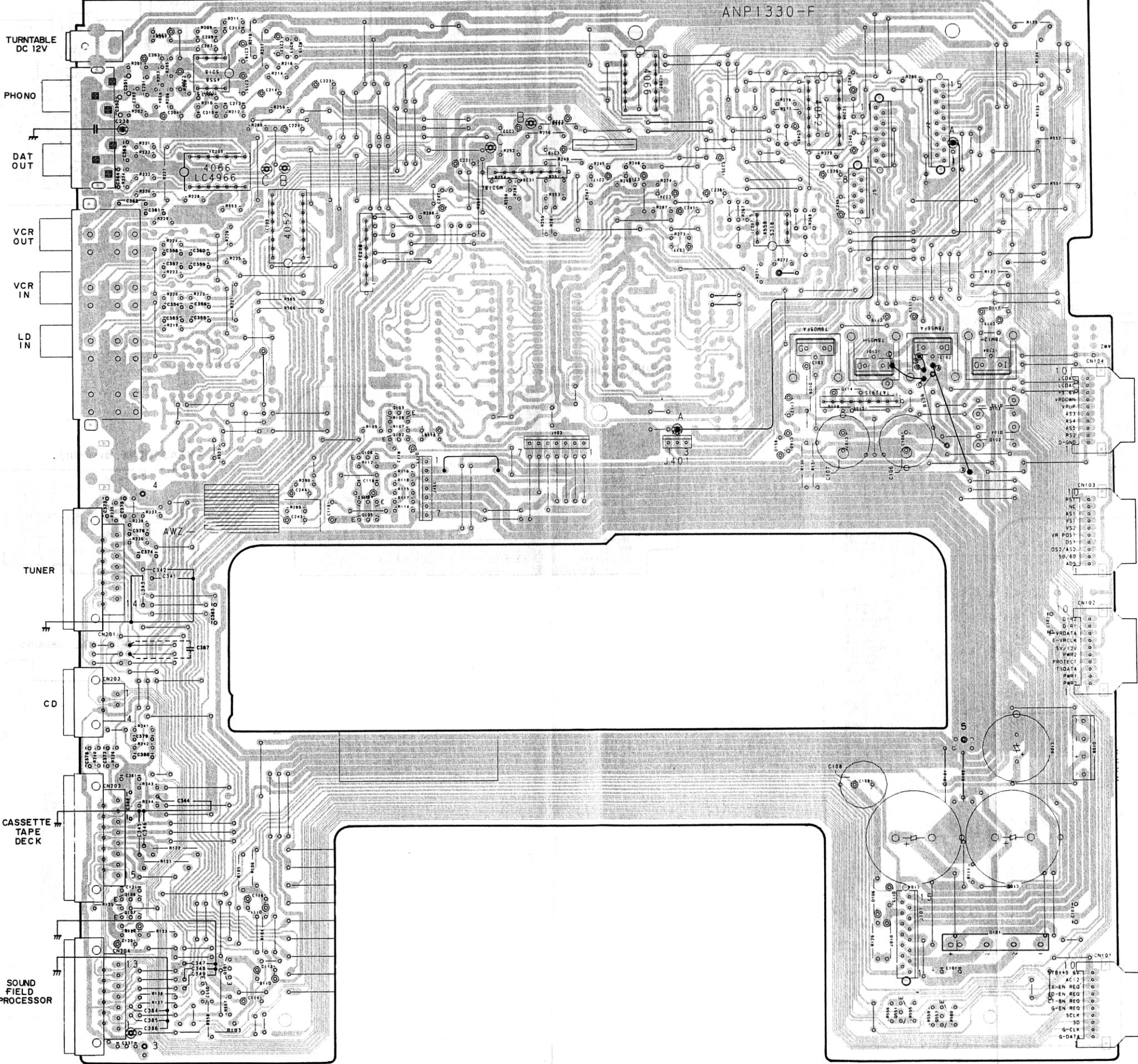
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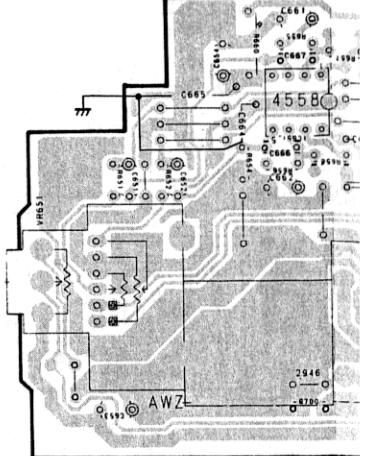
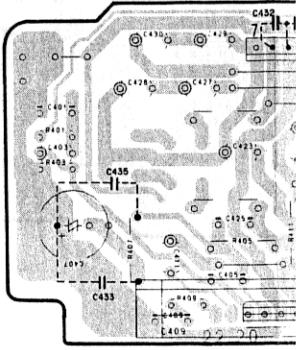
AF assembly (AWZ3406)IC201
IC202
IC206IC205
IC204IC203
IC207
IC208IC101
IC105Q103
Q102
Q106Q104
Q105

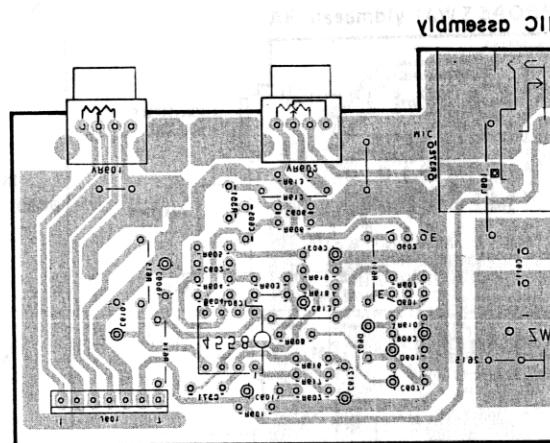
TUNER

CD

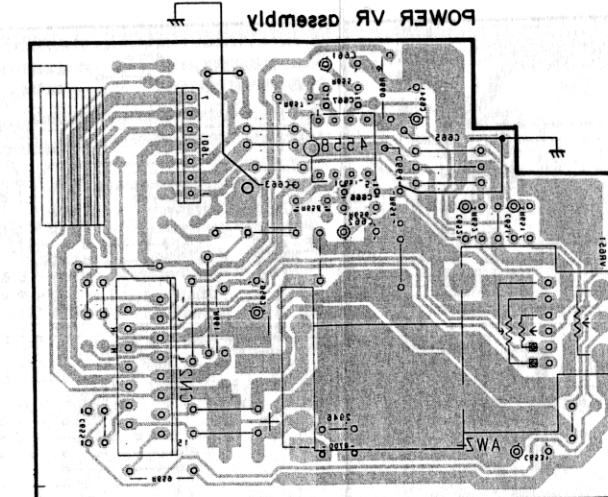
CASSETTE
TAPE DECKSOUND
FIELD
PROCESSORQ108
Q107Q101
Q552Q551
Q553

ANP1330-F

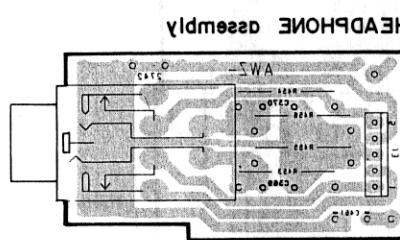
POWER VR assem**POWER assembly (AWZ2)**



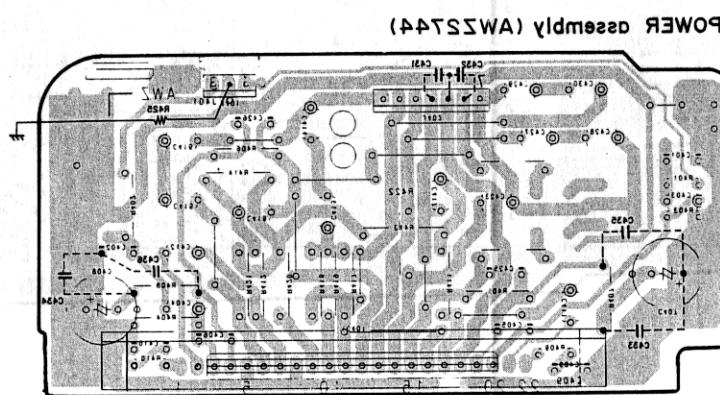
IIC Assembly



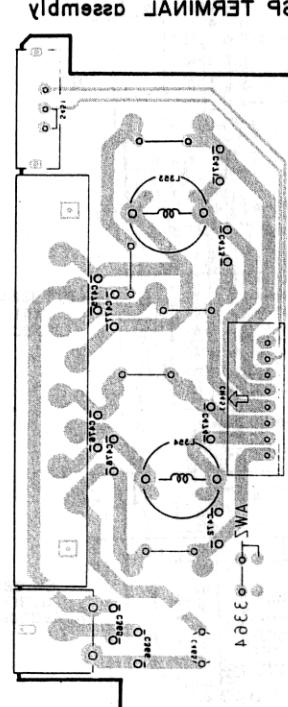
POWER ASSEMBLY



HEADPHONE Assembly

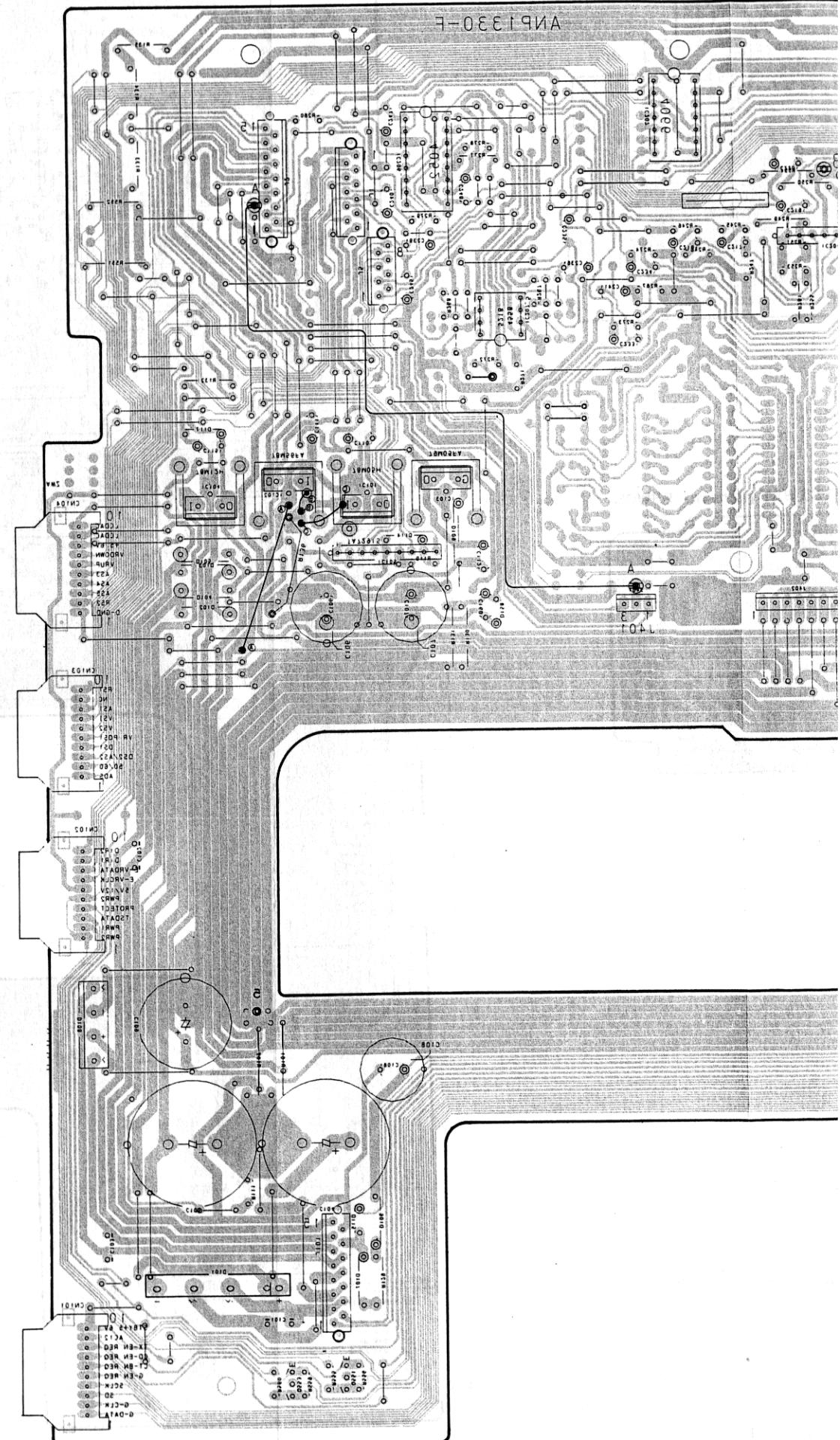


POWER Assembly (AWSA2244)



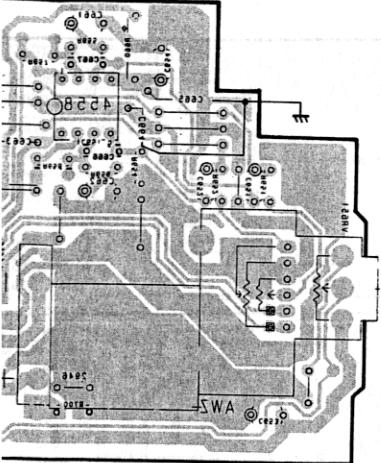
TERMINAL ASSEMBLY

This P.C.B. connection diagram is viewed from the foil side.

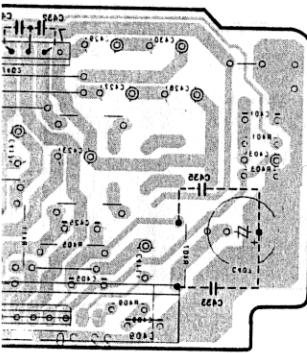


ANP1330-E

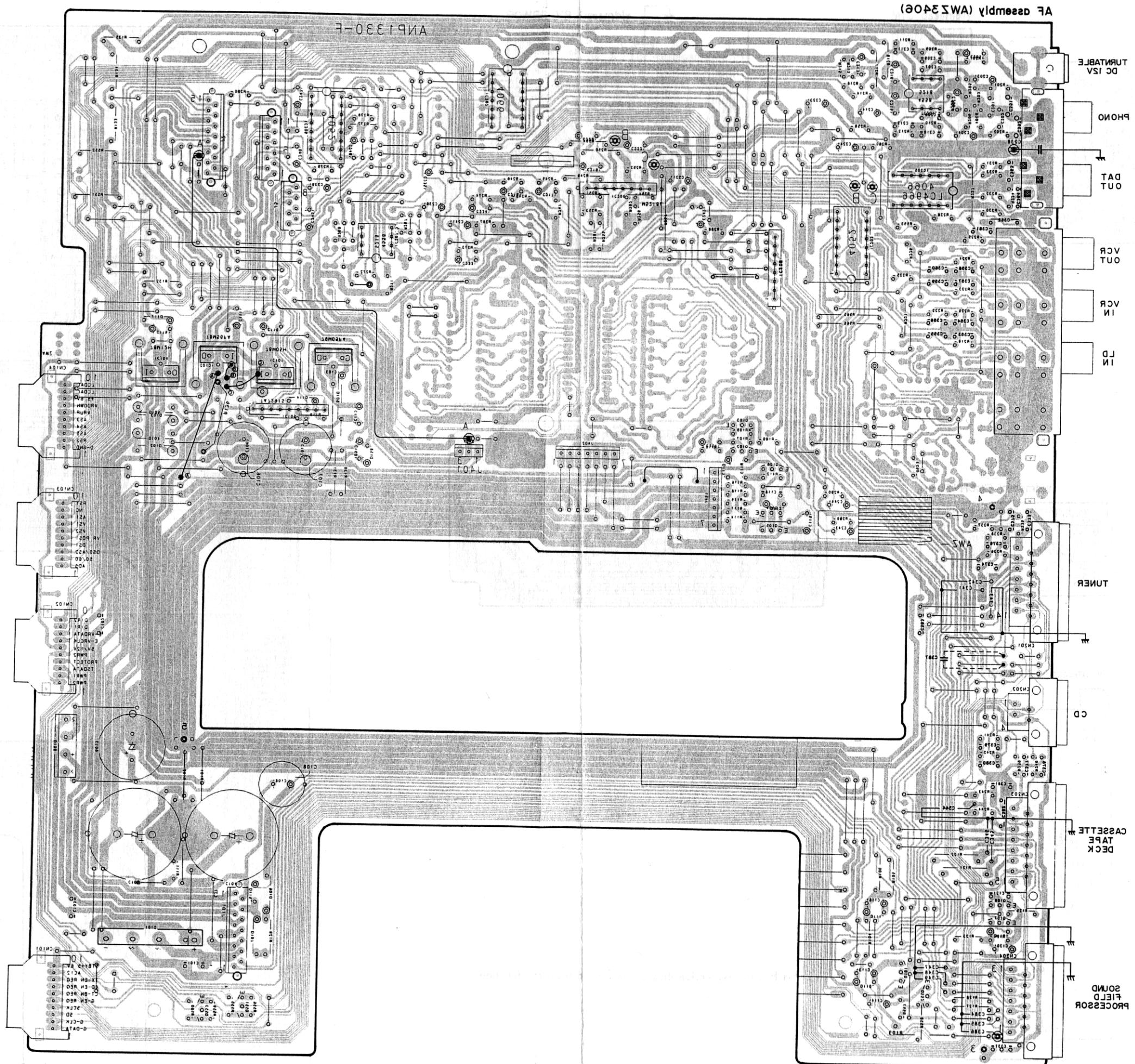
POWER AR assembly



POWER assembly (AM2525A)



viewed from the foil side.



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Q102 Q102
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IC108 Q108
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① POWER STANDBY/ON switch/indicator

This is the switch for electric power.

ON When set to the ON position, power is supplied and the unit becomes operational.

STANDBY When set to the STANDBY position, the main power flow is cut and the unit is no longer fully operational. A minute flow of power feeds the unit to maintain operation readiness.

The indicator above the switch lights when the power is STANDBY, and goes out during ON.

② Remote sensor**③ LSS SET button**

Use to operate the Listening Style Selector memory.

④ LSS MODE button

Use to call the Listening Style Selector.

⑤ Display section

Ⓐ This shows the position of the listening style selector.

Ⓑ This lights when you play a CD.

Ⓒ This lights when you can select CD and DAT direct mode.

⑥ DIRECT MODE button

Use this when you want by-pass sound quality adjustment circuitry and listen to a CD or DAT in the direct mode.

⑦ MUTING button/indicator

Use when you want to temporarily cut sound during playback. Press again to return to the previous volume level.

⑧ VOLUME control**⑨ PHONES jack**

For stereo headphones.

NOTE:

There is no output from the speakers when headphones are plugged into PHONES jack.

⑩ Input selector buttons/indicators**[PHONO]**

Press to play records on a turntable connected to the PHONO input jacks.

[TUNER]

Press to listen to radio broadcast.

[TAPE]

Press to listen to cassette tape.

[DAT]

Press to listen to a DAT playing on a digital audio tape deck connected to the DAT jacks.

[CD]

Press to listen to compact disc.

[LD]

Press to play an LD on a video disc player connected to the LD input jacks.

[VCR]

Press to play a tape on a video cassette recorder connected to the VCR jacks.

⑪ MIC (microphone) jack

This is a standard jack for connecting a microphone.

NOTE:

Microphone mixing is not possible when CD DIRECT or DAT DIRECT are ON.

⑫ MIC LEVEL control

Used for adjusting the volume of microphone.

⑬ BALANCE control

Used for changing the balance between left and right channels. Usually sets this control to the center position.

⑭ SPEAKERS button (A/ B OR A + B)/indicator

When the SPEAKER MODE selector switch on the rear panel is set to the A/B (left), use this button to switch between sound from speakers A only, and sound from speakers B only.

When the SPEAKER MODE selector switch is set to the A/A + B (right), use this button to switch between sound from speakers A only, and sound from both speakers A and B.

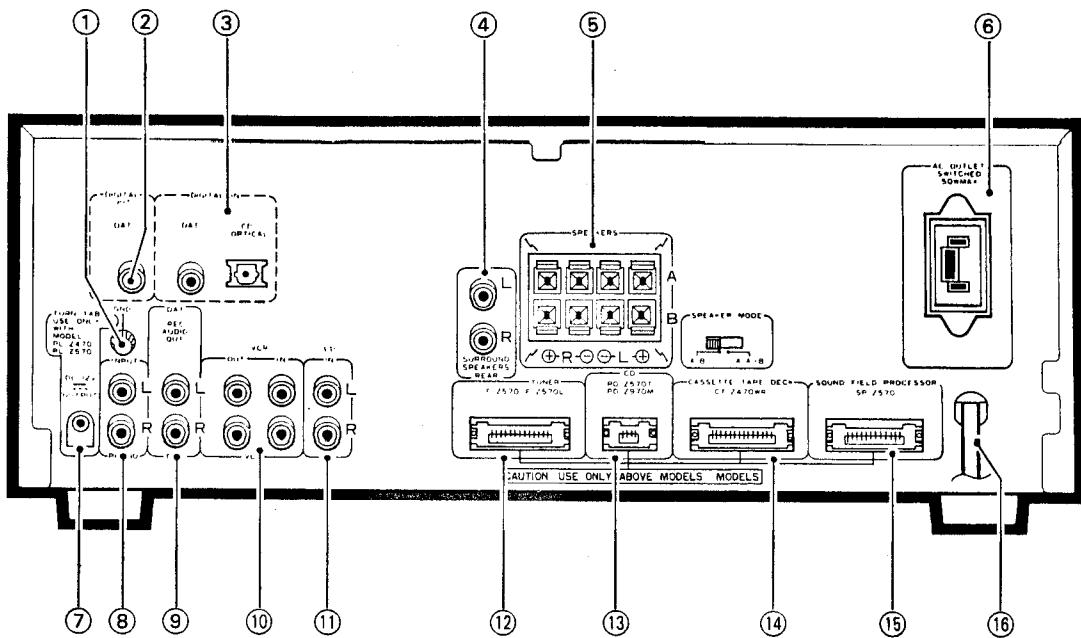
Refer to page 20 No.⑤ concerning SPEAKER MODE selector switch.

Rear panel SPEAKER MODE switch	SPEAKERS	
	Indicator off	Indicator lit
A/B	A	B
A/A + B	A	A + B

NOTE:

If speakers A and B are not both connected, there will be no sound when the button is set for A + B.

REAR PANEL FACILITIES



① Ground terminal (GND)

Connect this to the ground terminal on the turntable (except for PL-Z570/PL-Z470).

② DIGITAL OUT (DAT)

Outputs digital signal taken from CD player optical input.

A digital audio tape deck's digital input jack (coaxial cable input) can be connected here. Consult with your dealer to see if it's possible to connect your digital audio tape deck.

③ DIGITAL IN jacks

[DAT]

A digital audio tape deck's digital output jack (coaxial cable output) can be connected here.

Consult with your dealer to see if it's possible to connect your digital audio tape deck.

[CD]

Connect a CD player's OPTICAL OUT jack.

④ SURROUND SPEAKERS jacks

Connect the Surround speaker systems.

NOTE:

Connect a speaker system having a nominal impedance of 16 Ω or more.

⑤ SPEAKERS terminals and SPEAKER MODE selector switch

A: Connect to a first set of speakers.

B: Connect to a second set of speakers.

Set the selector switch to the A/B (left), and use the SPEAKERS button on the front panel to switch between sound from speakers A only, and sound from speakers B only.

If you set the selector switch to the A/A + B (right), use the SPEAKERS button on the front panel to switch between sound from speakers A only, and sound from both speakers A and B.

NOTE:

Connect a speaker system having a nominal impedance ranging from 8 Ω to 16 Ω.

⑥ AC OUTLET (SWITCHED 50 W MAX)

Power supplied through this outlet is turned on and off by the amplifier's POWER switch. Total electrical power consumption of connected equipment should not exceed 50 W.

PD-Z570T or PD-Z970M CD player power cord can be connected.

NOTE:

Do not connect appliances with high power consumption such as heaters, irons, or television sets to the AC OUTLET in order to avoid overheating or fire risk.

This can cause the amplifier to malfunction.

⑦ TURNTABLE (DC 12V OUTPUT) jack

This jack supplies power to the turntable PL-Z470/PL-Z570.

⑧ PHONO input jacks

Connect the output cord of the turntable to these jacks.

⑨ DAT REC OUT jacks

Connect to audio input jacks of the digital audio tape deck.

⑩ VCR jacks

IN: Connect to the audio output jacks of VCR.

OUT: Connect to audio input jacks of VCR.

⑪ LD input jacks

Connect to the audio output jacks of the LD player.

⑫ TUNER jack

Connect the tuner cord here.

⑬ CD jack

Connect the compact disc player (PD-Z570T/ PD-Z970M) cord here.

⑭ CASSETTE TAPE DECK jack

Connect the cassette deck cord here.

⑮ SOUND FIELD PROCESSOR jack

Connect the sound field processor cord here.

⑯ Power cord

Connect this to the AC wall socket.